From: Fauci, Anthony (NIH/NIAID) [E]
Sent: Sun, 2 Feb 2020 22:36:41 +0000
To: Routh, Jennifer (NIH/NIAID) [E]
Cc: Billet, Courtney (NIH/NIAID) [E];Stover, Kathy (NIH/NIAID) [E];Folkers, Greg (NIH/NIAID) [E];Conrad, Patricia (NIH/NIAID) [E];Marston, Hilary (NIH/NIAID) [E]
Subject: RE: Fauci/Redfield op-ed for review
Attachments: Redfield-Fauci Joint Op-Ed V2 020120_EOC Cleared Revised wR3 2.2.20 JR HM GF - with additional Fauci tracked changes still showing.docx, Redfield-Fauci Joint Op-Ed V2 020120_EOC Cleared Revised wR3 2.2.20 JR HM GF - with Fauci changes added - clean copy.docx

I have gone over the document and have made a number of tracked changes. In addition, for ease of reading I have accepted all the tracked changes and am sending a clean copy. Hence there are 2 attachments: 1) one with all tracked changes; 2) a clean copy accepting all changes. Please note that the CDC has not announced the 3 additional cases and so depending on when this goes out we need to make sure that the official number is 11 and not still 8Thanks!

From: Routh, Jennifer (NIH/NIAID) [E] <(b) (6)
Sent: Sunday, February 2, 2020 4:36 PM
To: Fauci, Anthony (NIH/NIAID) [E] (b) (6)>
Cc: Billet, Courtney (NIH/NIAID) [E] (b) (6)>; Stover, Kathy (NIH/NIAID) [E] (b) (6)>; Folkers, Greg (NIH/NIAID) [E] (b) (6)>; Conrad, Patricia (NIH/NIAID) [E] (b) (6); Marston, Hilary (NIH/NIAID) [E] (b) (6)>
Subject: Fauci/Redfield op-ed for review

Dr. Fauci –

Attached is the draft op-ed for your review. Greg, Hilary and I have added proposed edits in track changes. We will send back to CDC/HHS one document with all NIAID edits in track changes. HHS would like to get a draft to the White House at some point this evening.

Thanks,
Jen

Jennifer Routh [E]
News and Science Writing Branch
Office of Communications and Government Relations
National Institute of Allergy and Infectious Diseases (NIAID)
NIH/HHS
31 Center Drive Room 7A17C
Bethesda, MD 20892
Direct (b) (6)
(b) (6)

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From: Fauci, Anthony (NIH/NIAID) [E]
Sent: Sun, 2 Feb 2020 19:24:26 +0000
To: Cassetti, Cristina (NIH/NIAID) [E]
Subject: FW: Specific Questions About CoronaVirus

Please handle.

From: Rafael C. R. [redacted]>
Sent: Sunday, February 2, 2020 12:34 AM
To: Fauci, Anthony (NIH/NIAID) [E] [redacted]
Subject: Specific Questions About CoronaVirus

Hi Dr. Fauci, you might not remember me from my previous email. I'm a Brazilian who asked you some months ago about the influenza virus differences across regions. I recently traveled to DC and NY and had a great time there (before the Corona Virus outbreak)

I have some specific questions about the new Corona Virus, and would be very grateful if you can answer them:

1- Using available data, I've made a simple spreadsheet attempting to predict the virus behavior: https://docs.google.com/spreadsheets/d/1DAHQtFzXO-FKU405k8p864JBVHAlfzsHQghuywaTNbE/edit#gid=0
I've used **exponential trend,** although it seems to be spreading slower than the expected, I'd like to know if there's an accurate model for predicting this virus. Also, I assume virus don't always spread exponentially?

2- I listened to your interview podcast https://edhub.ama-assn.org/jn-learning/audio-player/18197306. Really amazing content. Let's assume this is going to be a worldwide outbreak. How can I get prepared for the worst? Buy water, dry food, stay indoors, withdraw money, etc?

Once again, I'd like to thank you very much for reading this email. I bet this is a very busy time for you, so it means a lot to me
Thank you,
Rafael

From: Fauci, Anthony (NIH/NIAID) [E]
Sent: Sun, 2 Feb 2020 18:33:43 +0000
To: Liang, Jake (NIH/NIDDK) [E]
Cc: Mark Dybul;Conrad, Patricia (NIH/NIAID) [E];Barasch, Kimberly (NIH/NIAID) [C]
Subject: RE: Favor

Thanks, Jake. Mark will contact you directly.

From: Liang, Jake (NIH/NIDDK) [E] (b) (6)>
Sent: Sunday, February 2, 2020 1:32 PM
To: Fauci, Anthony (NIH/NIAID) [E] (b) (6)
Cc: Mark Dybul (b) (6); Conrad, Patricia (NIH/NIAID) [E] (b) (6); Barasch, Kimberly (NIH/NIAID) [C] (b) (6)
Subject: Re: Favor

Hi, Tony, I just returned from an overseas trip but should be around tomorrow and can certainly clear some time to meet with Mark. I met Mark at the NAM meeting last year and would love to hear what they have to say. Let me know what works. Good luck in dealing with the new coronavirus pandemic (not sure whether it is qualified as one yet; if not, pretty close)!! Jake

---

From: Anthony Fauci <(b) (6)
Date: Sunday, February 2, 2020 at 12:20 PM
To: Jake Liang (b) (6)>
Cc: Mark Dybul (b) (6)>, "Conrad, Patricia (NIH/NIAID) [E]" (b) (6), "Barasch, Kimberly (NIH/NIAID) [C]" (b) (6)>
Subject: Favor

Jake:
Sorry for this last minute ask, but (b) (6), Ambassador Mark Dybul, who is the former Head of PEPFAR and the former Director of the Global Fund to Fight AIDS, TB, and Malaria will be at the NIH tomorrow with a scientist who has some very interesting data on hepatitis B. I was supposed to meet with them, but I am swamped with the coronavirus. Is there any chance that you can meet with them briefly tomorrow. I believe that you might be interested in seeing them. I have copied Mark on this e-mail and so I will ask him to e-mail you to see if you can make this happen. Many thanks.
Best regards,
Tony

Anthony S. Fauci, MD
Director
National Institute of Allergy and Infectious Diseases
Building 31, Room 7A-03
31 Center Drive, MSC 2520
National Institutes of Health
Bethesda, MD 20892-2520

Phone: (b) (6)
FAX: (301) 496-4409
E-mail: (b) (6)
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From: Fauci, Anthony (NIH/NIAID) [E]
Sent: Sun, 2 Feb 2020 18:02:22 +0000
To: Billet, Courtney (NIH/NIAID) [E]
Subject: RE: Seeking comment on Indian paper about new Coronavirus

Geeeez

From: Billet, Courtney (NIH/NIAID) [E] (b) (6)
Sent: Sunday, February 2, 2020 12:53 PM
To: Fauci, Anthony (NIH/NIAID) [E] (b) (6)
Cc: Marston, Hilary (NIH/NIAID) [E] (b) (6); Folkers, Greg (NIH/NIAID) [E] (b) (6)>; Conrad, Patricia (NIH/NIAID) [E] (b) (6)>; Stover, Kathy (NIH/NIAID) [E] (b) (6)>; Routh, Jennifer (NIH/NIAID) [E] (b) (6)>
Subject: Fwd: Seeking comment on Indian paper about new Coronavirus

FYI re the paper from the Indian researchers.
Talk about trying to put the genie back in the bottle! Yeesh.

From: "Mascola, John (NIH/VRC) [E]" <(b) (6)
Date: Sunday, February 2, 2020 at 10:39:42 AM
To: "Routh, Jennifer (NIH/NIAID) [E]" (b) (6)>, "Graham, Barney (NIH/VRC) [E]" (b) (6) "Hiatt, Nissa (NIH/VRC) [C]" (b) (6)>
Cc: "Marston, Hilary (NIH/NIAID) [E]" <(b) (6)>, "Billet, Courtney (NIH/NIAID) [E]" (b) (6)>, "Stover, Kathy (NIH/NIAID) [E]" (b) (6)>
Subject: RE: Seeking comment on Indian paper about new Coronavirus

Also note the following from the author on the BioRxiv comment section:

Prashant Pradhan • 8 hours ago

This is a preliminary study. Considering the grave situation, it was shared in BioRxiv as soon as possible to have creative discussion on the fast evolution of SARS-like corona viruses. It was not our intention to feed into the conspiracy theories and no such claims are made here. While we appreciate the criticisms and comments provided by scientific colleagues at BioRxiv forum and elsewhere, the story has been differently interpreted and shared by social media and news platforms. We have positively received all criticisms and comments. To avoid further misinterpretation and confusions world-over, we have decided to withdraw the current version of the preprint and will get back with a revised version after reanalysis, addressing the comments and concerns. Thank you to all who contributed in this open-review process.
: Authors of the Manuscript

From: Routh, Jennifer (NIH/NIAID) [E] (b) (6)
Sent: Sunday, February 2, 2020 10:35 AM
To: Graham, Barney (NIH/VRC) [E] (b) (6); Hiatt, Nissa (NIH/VRC) [C] (b) (6)
Cc: Marston, Hilary (NIH/NIAID) [E] (b) (6); Mascola, John (NIH/VRC) [E] (b) (6)>; Billet, Courtney (NIH/NIAID) [E] (b) (6)>; Stover, Kathy (NIH/NIAID) [E] < (b) (6)
Subject: RE: Seeking comment on Indian paper about new Coronavirus

Hi Barney –

We consulted with HHS and ASF. OCGR is going to send a note to the reporter to decline, noting that the paper is not peer-reviewed. Please let us know if you receive similar requests.

Thanks,
Jen

Jennifer Routh [E]
News and Science Writing Branch
Office of Communications and Government Relations
National Institute of Allergy and Infectious Diseases (NIAID)
NIH/HHS
31 Center Drive Room 7A17C
Bethesda, MD 20892
Direct: (b) (6)
(b) (6)

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From: Graham, Barney (NIH/VRC) [E] (b) (6)
Sent: Saturday, February 1, 2020 2:11 PM
To: Hiatt, Nissa (NIH/VRC) [C] (b) (6)>; Routh, Jennifer (NIH/NIAID) [E] (b) (6)>
Cc: Marston, Hilary (NIH/NIAID) [E] (b) (6)>; Mascola, John (NIH/VRC) [E] (b) (6)
Subject: FW: Seeking comment on Indian paper about new Coronavirus

Hi Nissa and Jen,

This is one we don't want to answer without high-level input, but wanted you to know about the rising controversy.

BG

From: Issam AHMED <Issam.AHMED@afp.com>
Sent: Friday, January 31, 2020 5:27 PM
To: Graham, Barney (NIH/VRC) [E] (b) (6)
Subject: Seeking comment on Indian paper about new Coronavirus

Dear Dr Graham,

I'm a science journalist with news agency Agence France-Presse writing with a request -- apologies for reaching out on a Friday evening! I was told by a contact you may be willing to give an opinion on this paper that has just gone live https://www.biorxiv.org/content/10.1101/2020.01.30.927871v1.full.pdf it suggests the new Coronavirus has four inserts similar to HIV-1 and this is not a coincidence.

Thanks you very much, if you are able.

Issam Ahmed

Issam AHMED
Health, Science and Environment Correspondent
1500 K St. NW - 20005 Washington
Tel: (202) 414-0521

June 24, 2020
Virus death toll nears half a million as cases surge in US, Latin America

Join us on:

afp.com

From: Fauci, Anthony (NIH/NIAID) [E]
Sent: Sun, 2 Feb 2020 17:13:03 +0000
To: Mark Dybul
Subject: RE: A connection to jake

Mark:
Thanks for the note. Sorry that I had to cancel. This is White House in full overdrive and I am in the middle of it. Reminiscent of post-anthrax days. I will send an email to Jake today to introduce you. Again, sorry about the cancellation. Hope to see you soon. Regards to Jason.
Best,
Tony

-----Original Message-----
From: Mark Dybul [redacted (b) (6)]>
Sent: Sunday, February 2, 2020 11:37 AM
To: Fauci, Anthony (NIH/NIAID) [E] <[redacted (b) (6)]
Subject: A connection to jake

Hey tony

Know you are buried in coronavirus. Totally understand need to cancel meeting tomorrow. We will set up a zoom in hen things calm down.

We have made additional progress on hbv including data from 2 new mouse models. We were going to share Monday

Realize this is last minute but might it be possible for you to connect me to jake liang in case we can squeeze in a meeting with him (serhat is already on east coast - we took a risk knowing you might have to cancel)?

If you are not comfortable with that I could send him a cold call email mentioning we have shared the data with you. You were kind enough to introduce us at the nam dinner when [redacted (b) (6)].

Hope you at least have time to enjoy Super Bowl. Hang in there - am sure everyone is leaning heavily on you as usual.

Thanks much
Mark
Sent from my iPhone

From: Fauci, Anthony (NIH/NIAID) [E]
Sent: Sun, 2 Feb 2020 16:49:35 +0000
To: Collins, Francis (NIH/OD) [E]
Cc: Tabak, Lawrence (NIH/OD) [E]
Subject: FW: Teleconference

Francis:
Do you have a minute for a quick call?
Tony

From: Jeremy Farrar (b) (6)
Sent: Sunday, February 2, 2020 11:28 AM
To: Fauci, Anthony (NIH/NIAID) [E] (b) (6); Collins, Francis (NIH/OD) [E] (b) (6)
Cc: Tabak, Lawrence (NIH/OD) [E] (b) (6)>
Subject: Re: Teleconference

Tedros and Bernhard have apparently gone into conclave....they need to decide today in my view. If they do prevaricate, I would appreciate a call with you later tonight or tomorrow to think how we might take forward.

Meanwhile....

https://www.zerohedge.com/geopolitical/coronavirus-contains-hiv-insertions-stoking-fears-over-artificially-created-bioweapon

---

From: "Fauci, Anthony (NIH/NIAID) [E]" (b) (6)>
Date: Sunday, 2 February 2020 at 15:30
To: Jeremy Farrar (b) (6)>, Francis Collins (b) (6)>
Cc: "Tabak, Lawrence (NIH/OD) [E]" (b) (6)
Subject: RE: Teleconference

Jeremy:
Sorry that I took so long to weigh in on your e-mails with Francis and me. I was on conference calls. (b) (5)
(b) (5)
Best regards,
Tony

From: Jeremy Farrar (b) (6)>
Sent: Sunday, February 2, 2020 7:13 AM

To: Collins, Francis (NIH/OD) [E] (b) (6)>
Cc: Fauci, Anthony (NIH/NIAID) [E] (b) (6)>; Tabak, Lawrence (NIH/OD) [E] <(b) (6)
Subject: Re: Teleconference

....Really appreciate us thinking through the options... (b) (5)

From: Francis Collins <(b) (6)>
Date: Sunday, 2 February 2020 at 12:03
To: Jeremy Farrar <(b) (6)>
Cc: "Fauci, Anthony (NIH/NIAID) [E]" (b) (6), "Tabak, Lawrence (NIH/OD) [E]" (b) (6)
Subject: RE: Teleconference

Hi Jeremy,

Thanks for forwarding these additional reflections from Mike and Bob. (b) (3) (b) (5)

Francis

From: Jeremy Farrar (b) (6)
Sent: Sunday, February 2, 2020 6:53 AM
To: Collins, Francis (NIH/OD) [E] (b) (6)
Cc: Fauci, Anthony (NIH/NIAID) [E] (b) (6)>; Tabak, Lawrence (NIH/OD) [E] (b) (6)
Subject: Re: Teleconference

Thank you

See thoughts overnight from others.

(b) (5)

Jeremy

From: Francis Collins [redacted]
Date: Sunday, 2 February 2020 at 10:27
To: Jeremy Farrar [redacted]
Cc: "Fauci, Anthony (NIH/NIAID) [E]" [redacted], "Tabak, Lawrence (NIH/OD) [E]" [redacted]
Subject: RE: Teleconference

Jeremy,

[redacted]

I'm available any time today except 3:15 – 5.45 pm EST (on a plane) for a call to Tedros. Let me know if I can help get through his thicket of protectors.

Francis

From: Jeremy Farrar [redacted]
Sent: Sunday, February 2, 2020 4:48 AM
To: Andrew Rambaut <[redacted]>
Cc: R.A.M. Fouchier [redacted]; Fauci, Anthony (NIH/NIAID) [E] [redacted] Patrick Vallance [redacted]; Drosten, Christian [redacted]; M.P.G. Koopmans [redacted]; Eddie Holmes [redacted]; Kristian G. Andersen [redacted]; Paul Schreier [redacted]; Ferguson, Mike [redacted]; Collins, Francis (NIH/OD) [E] [redacted]; Tabak, Lawrence (NIH/OD) [E] [redacted]; Josie Golding [redacted]
Subject: Re: Teleconference

This is a very complex issue.

I will:

[redacted]

(b) (5)

I suggest we don't get into a further scientific discussion here, but wait for that group to be established.

Jeremy

From: (b) (6)
Date: Sunday, 2 February 2020 at 09:38
To: Jeremy Farrar <(b) (6)>
Cc: (b) (6)>, "Fauci, Anthony (NIH/NIAID) [E]' (b) (6), Patrick Vallance (b) (6)>, "Drosten, Christian" (b) (6), Marion Koopmans <(b) (6), Edward Holmes (b) (6) (b) (6), "Kristian G. Andersen" (b) (6), Paul Schreier (b) (6) Michael FMedSci (b) (6)>, Francis Collins (b) (6) (b) (6) Josie Golding (b) (6)
Subject: Re: Teleconference

Dear Jeremey, Ron and all,

Thanks for inviting me on the call yesterday. (b) (5)
(b) (5)

[redacted] (b) (5)

Best,
Andrew

On 2 Feb 2020, at 08:40, Jeremy Farrar [redacted] (b) (6) > wrote:

Thanks Ron

[redacted] (b) (5)

Thoughts on that very welcome

On 2 Feb 2020, at 08:30, R.A.M. Fouchier [redacted] (b) (6) > wrote:

Dear Jeremy and others,

This was a very useful teleconference. [redacted] (b) (5)

[redacted] (b) (5)

Thanks for organizing this on such short notice,
Kind regards

Ron

Ron's notes:

[redacted]

(b) (5)

[redacted]

Van: Jeremy Farrar [redacted] (b) (6)
Datum: zaterdag 1 februari 2020 om 21:59
Aan: "Fauci, Anthony (NIH/NIAID) [E]" [redacted] (b) (6)>, Patrick Vallance [redacted] (b) (6)
CC: Christian Drosten [redacted] (b) (6) "M. Koopmans" [redacted] (b) (6), "R.A.M. Fouchier" [redacted] (b) (6), Edward Holmes [redacted] (b) (6) [redacted] (b) (6), Andrew Rambaut [redacted] (b) (6) "Kristian G. Andersen" [redacted] (b) (6), Paul Schreier [redacted] (b) (6) [redacted] (b) (6), "Ferguson, Mike" [redacted] (b) (6) Francis Collins [redacted] (b) (6), '[redacted] (b) (6)>, Josie Golding [redacted] (b) (6)
Onderwerp: Re: Teleconference

Thank you to everyone for joining.

There is clearly much to understand understand in this. This call was very helpful to hear some of our current understanding and the many gaps in our knowledge. [redacted] (b) (5)

(b) (5)

[redacted]

[redacted]

I hope that is a reasonable approach, please send any thoughts or suggestions.

Once again, thank you for making time over a weekend and for such an informed discussion on a complex issue.

Thank you and best wishes Jeremy

From: Jeremy Farrar [redacted]
Date: Saturday, 1 February 2020 at 15:34
To: "Fauci, Anthony (NIH/NIAID) [E]" [redacted], Patrick Vallance [redacted]
Cc: "Drosten, Christian" [redacted], Marion Koopmans [redacted] [redacted] Edward Holmes [redacted] [redacted] "Kristian G. Andersen" [redacted], Paul Schreier [redacted], Michael FMedSci [redacted]
Subject: Teleconference

1st February (2nd Feb for Eddie)
Information and discussion is shared in total confidence and not to be shared until agreement on next steps.

Dial in details attached.
Please mute phones.
I will be on email throughout – email Paul or I Paul if any problems
If you cannot make it, I will phone you afterwards to update.

One Hour

6am Sydney
8pm CET
7pm GMT
2pm EST
11am PST
(Hope I have the times right!)

Thank you for the series of calls and for agreeing to join this call.

Agenda

- Introduction, focus and desired outcomes - JF
- Summary – KA
- Comments – EH
- Q&A – All
- Summary and next steps - JF

Kristian Anderson
Bob Garry - I have not been able to contact Bob. Please forward if you can.
Christian Drosten
Tony Fauci
Mike Ferguson
Ron Fouchier
Eddie Holmes
Marion Koopmans
Stefan Pohlmann
Andrew Rambaut
Paul Schreier
Patrick Vallance

Andrew Rambaut
Institute for Evolutionary Biology
Ashworth Laboratories, University of Edinburgh, Edinburgh, EH9 3FL, UK

contact [redacted] | tel [redacted]

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From: Fauci, Anthony (NIH/NIAID) [E]
Sent: Sun, 2 Feb 2020 15:45:28 +0000
To: Goldner, Shannah (NBCUniversal);Conrad, Patricia (NIH/NIAID) [E]
Subject: RE: Thank you so much

My pleasure!

From: Goldner, Shannah (NBCUniversal) <shannah.goldner@nbcuni.com>
Sent: Sunday, February 2, 2020 10:33 AM
To: Conrad, Patricia (NIH/NIAID) [E] [redacted] Fauci, Anthony (NIH/NIAID) [E] [redacted]
Subject: Thank you so much

Dr Fauci, thank you so much for making time for our show this morning. We are very grateful to have you on, sharing your knowledge on this issue. I know you are extremely busy, but again, so many thanks.

Sincerely – and have a good day, though I know a busy one. Shannah

And Patricia, thank you so much for your help and patience with me, I appreciate it

Shannah

From: Conrad, Patricia (NIH/NIAID) [E] [redacted]>
Sent: Saturday, February 01, 2020 8:42 PM
To: Goldner, Shannah (NBCUniversal) <shannah.goldner@nbcuni.com>; Fauci, Anthony (NIH/NIAID) [E] [redacted]
Cc: Antoniak, Cynthia (NBCUniversal, MSNBC) <Cynthia.Antoniak@MSNBC.COM>
Subject: [EXTERNAL] Re: details re tomorrow's MSNBC morning interview

Adding dr Fauci here - he will arrive at the Nebraska ave studio no later than 710 am for your 730 am ET live hit as per below.

If there are any changes or cancellations in the morning please call his cell at [redacted] My cell is [redacted]

Thank you.

Sent from my iPhone

> On Feb 1, 2020, at 8:32 PM, Goldner, Shannah (NBCUniversal) <shannah.goldner@nbcuni.com> wrote:

Patricia, hi...the contact at the NBC bureau (4001 Nebraska Ave) is Parita Desai. The number at the studio is 202-885-4800. The bureau is aware that Dr. Fauci is driving himself and he can park at the bureau.

The interview time is scheduled for approx 7.30am, so if he can be at the studio by 7am for powder and to be seated, that would be appreciated.

The producer in NY who will email you the information details for the segment tomorrow is Cyndi Antoniak. If you need to reach her before she reaches you in the morning, her email is Cynthia.antoniak@nbcuni.com and her phone number is (b) (6)

The interview is one on one with our anchors Kendis Gibson and Cori Coffin.

If you need more information, please let me know. Thank you for your help and your patience today, I appreciate it.

All the best,
Shannah

Shannah Goldner
MSNBC
W: 212-664-1289
C: (b) (6)

From: Conrad, Patricia (NIH/NIAID) [E] (b) (6)
Sent: Saturday, February 01, 2020 7:54 PM
To: Goldner, Shannah (NBCUniversal) <shannah.goldner@nbcuni.com>
Subject: [EXTERNAL] RE: Thank you so much

Hi – are we firm for tomorrow? need onsite contact info..thx

From: Goldner, Shannah (NBCUniversal) <shannah.goldner@nbcuni.com>
Sent: Saturday, February 1, 2020 1:28 PM
To: Conrad, Patricia (NIH/NIAID) [E] (b) (6)>
Cc: Routh, Jennifer (NIH/NIAID) [E] (b) (6); Stover, Kathy (NIH/NIAID) [E]: (b) (6)>
Subject: RE: Thank you so much

I will forward all that soon. Thank you!

From: Conrad, Patricia (NIH/NIAID) [E] (b) (6)>
Sent: Saturday, February 01, 2020 1:26 PM
To: Goldner, Shannah (NBCUniversal) <shannah.goldner@nbcuni.com>
Cc: Routh, Jennifer (NIH/NIAID) [E] (b) (6); Stover, Kathy (NIH/NIAID) [E] (b) (6)
Subject: [EXTERNAL] RE: Thank you so much

Yes – he can do that hit time – just let us know when it is firm. He will drive his car to the studio.

I will need an onsite name and cell number for him at the studio herein dc

From: Goldner, Shannah (NBCUniversal) <shannah.goldner@nbcuni.com>
Sent: Saturday, February 1, 2020 1:20 PM
To: Conrad, Patricia (NIH/NIAID) [E] [redacted]
Cc: Routh, Jennifer (NIH/NIAID) [E] [redacted]; Stover, Kathy (NIH/NIAID) [E] [redacted]
Subject: Thank you so much
Importance: High

Patricia, hi, thank you so much for getting back to me and again, apologies to Dr. Fauci, I do understand how swamped he.

With that said, I'll confirm the exact time at around 2pm our time, but I think the interview will be at approx 7:30am.

Would you like me to arrange transportation to and from the studio? We'd like Dr. Fauci to be at the studio by 7:10am-ish?

Thank you so much. Shannah

From: Conrad, Patricia (NIH/NIAID) [E] [redacted]
Sent: Saturday, February 01, 2020 12:41 PM
To: Goldner, Shannah (NBCUniversal) <shannah.goldner@nbcuni.com>
Cc: Routh, Jennifer (NIH/NIAID) [E] [redacted]; Stover, Kathy (NIH/NIAID) [E] [redacted]
Subject: [EXTERNAL] FW: request for a live interview tomorrow morning, on MSNBC
Importance: High

Good afternoon –

I believe we can make this work – if we can – it would need to be done in your NBC Studio in WDC at 4001 Nebraska Ave NW

Will that work and what would the exact hit time be?

From: Goldner, Shannah (NBCUniversal) <shannah.goldner@nbcuni.com>
Sent: Saturday, February 1, 2020 11:09 AM
To: Fauci, Anthony (NIH/NIAID) [E] (b)(6)
Subject: request for a live interview tomorrow morning, on MSNBC
Importance: High

Dr. Fauci, good morning.
Are you ava lable to do an interview tomorrow sometime in the 7 30 to Bam ET hour, to discuss the latest news about the Coronavirus? The interview would be one on one and approx 5mins. I saw you on the Today show yesterday and I would love to get you on MSNBC to discuss this, I know our viewers will have a better understanding of the situation if you can take us through it.
I can arrange a satellite location/transportation/whatever is needed to make this work out.

Thank you for your consideration and I hope to hear from you soon.
All the best,
Shannah

Shannah Goldner
MSNBC
W: 212-664-1289
C: (b)(6)

From: Fauci, Anthony (NIH/NIAID) [E]
Sent: Sun, 2 Feb 2020 15:44:24 +0000
To: Daley, George Q.
Cc: Collins, Francis (NIH/OD) [E] (b)(6);Marston, Hilary (NIH/NIAID) [E],Graham, Barney (NIH/VRC) [E]
Subject: RE: Inquiry and possible pone call

George:
Thanks for the note. There is a lot of communications between scientists in China and their colleagues in the USA , many with whom they have been collaborating prior to the outbreak. There is no real "coordination" of this response since we do not know who is doing what until we are told – just like you have done here. Dr. Soumya Swaminathan, Chief Scientist at WHO is organizing a meeting on Feb. 11-12 in Geneva to try and develop a research agenda for nCoV. I am sure that Chinese scientists will be there. It might be helpful to contact her. Her e-mail address is (b)(6).
I hope that this is helpful. I will follow-up with a call.
Best,
Tony

From: Daley, George Q. <(b)(6)>
Sent: Sunday, February 2, 2020 10:32 AM
To: Fauci, Anthony (NIH/NIAID) [E] (b)(6); Fauci, Anthony (NIH/NIAID) [E] (b)(6)>
Subject: Inquiry and possible pone call

Dear Tony,

Alan Garber, Harvard's Provost, and I met yesterday with a team led by Jack Xia, the CEO of China's Evergrande Company, and Dr Jack Liu, Evergrande's chief health officer, who stated thy were acting on behalf of Dr Zhong Nanshan, China's key point person on the coronavirus outbreak (see below). (b)(4), and they arranged a conference call for tomorrow morning EST with Dr. Zhong.

While I have been mobilizing efforts of our community to react to the virus and to this request, I am not naïve to the challenging politics of such a relationship. I do not want to complicate or duplicate efforts already underway, and am writing to request

whatever information you are willing to share on your current efforts to coordinate a response.

If a phone call is more facile, please do not hesitate to try my cell: [redacted] anytime today.

Sincerely,

George

George Q. Daley, MD, PhD
Dean, Harvard Medical School
Caroline Shields Walker Professor of Medicine
Professor of Biological Chemistry and Molecular Pharmacology

Office of the Dean, Gordon Hall
25 Shattuck Street, Boston MA 02115
Contact: [redacted]

From: Jack Liu [redacted]
Date: Saturday, February 1, 2020 at 11:26 PM
To: Public HMS Email [redacted]
Cc: 谈朝晖 [redacted], 陈敏 Min Chen [redacted]
Subject: Follow up on today's meeting

Dear Dr Daley:
Per our discussion this afternoon in the conference room at your school, [redacted]

[redacted]

Jack Liu, MD

该邮件从移动设备发送

From: Fauci, Anthony (NIH/NIAID) [E]
Sent: Sun, 2 Feb 2020 15:33:34 +0000
To: Collins, Francis (NIH/OD) [E]
Cc: Tabak, Lawrence (NIH/OD) [E];Wolinetz, Carrie (NIH/OD) [E];Conrad, Patricia (NIH/NIAID) [E],Cassetti, Cristina (NIH/NIAID) [E],Marston, Hilary (NIH/NIAID) [E]
Subject: RE: 2019 novel Coronavirus Global research and innovation forum: towards a research roadmap Feb 11-12, 2020 Geneva WHO HQ

Francis:
This is a meeting aimed at setting research priorities and I do not believe that it impacts or overlaps with the Tedros proposal. I will have my staff submit some names (mostly high level program people) to represent us at this meeting.
Tony

From: Collins, Francis (NIH/OD) [E] (b) (6)
Sent: Sunday, February 2, 2020 10:11 AM
To: Fauci, Anthony (NIH/NIAID) [E] (b) (6)>
Cc: Tabak, Lawrence (NIH/OD) [E] (b) (6); Wolinetz, Carrie (NIH/OD) [E] (b) (6)
Subject: FW: 2019 novel Coronavirus Global research and innovation forum: towards a research roadmap Feb 11-12, 2020 Geneva WHO HQ

Hi Tony,

Just encountered this message from Soumya of WHO, inviting attendance at a meeting in Geneva on Feb. 11 – 12. I'm not sure how that will fit with the Tedros proposal.

Who would be the right persons from NIH to propose for Soumya's meeting?

Francis

From: SWAMINATHAN, Soumya (b) (6)>
Sent: Friday, January 31, 2020 4:41 AM
(b) (6)
(b) (6) Collins, Francis (NIH/OD) [E] (b) (6)
Cc: SATHIYAMOORTHY, Vaseeharan < (b) (6)>, RIVEROS BALTA, Alina Ximena (b) (6); BORGES, Andrea (b) (6); MCLELLAN, Faith (b) (6)>; HILL, Suzanne Rose (b) (6); GARAPO, Charity Helen (b) (6)>

Subject: 2019 novel Coronavirus Global research and innovation forum: towards a research roadmap Feb 11-12, 2020 Geneva WHO HQ

Dear All,

I am delighted to inform you that WHO is organizing a global research partners forum on February 11th and 12th in Geneva, to discuss research priorities related to the novel Corona virus. The expected outcome is a research roadmap with clearly defined priorities and a governance framework to take each thematic area forward. Several thematic areas will be considered at the meeting, namely: virus, diagnostics; natural history and transmission; clinical; therapeutics; vaccines; ethics; regulatory science; animal health; data/samples analysis and sharing and, social sciences. We believe that this meeting will be critical in consensus building on the most important research questions, as well as in building global partnerships and collaborations to take this work forward.

This meeting is being organized in partnership with GLOPID R and is being supported by the Bill and Melinda Gates foundation, DFID, Wellcome Trust and several other partners. The secretariat within WHO is the R&D blueprint, co-chaired by Dr Mike Ryan and myself.

As the head of an agency that would play an important role in addressing this new viral outbreak, e ther by undertaking or funding research, or both, I take great pleasure in inviting you to this meeting. I apologize for the short notice, but you will understand that we have had to plan this in the past few days, keeping in mind the evolving situation.

Kindly let me know if you (or your nominee) will be able to attend and if you need any support from us. Please copy [redacted] and [redacted] in your response.

With best wishes,
Soumya
Chief Scientist

From: Fauci, Anthony (NIH/NIAID) [E]
Sent: Sun, 2 Feb 2020 12:35:48 +0000
To: Lorsch, Jon (NIH/NIGMS) [E]
Subject: RE: Update from Ming

Exhausted, but OK. Thanks

-----Original Message-----
From: Lorsch, Jon (NIH/NIGMS) [E] <[redacted] (b) (6)>
Sent: Sunday, February 2, 2020 7:35 AM
To: Fauci, Anthony (NIH/NIAID) [E] [redacted] (b) (6)
Subject: Re: Update from Ming

Thanks, Tony. [redacted] (b) (6)

I hope you are hanging in there!

Jon

On 2/1/20, 11:20 PM, "Fauci, Anthony (NIH/NIAID) [E]" [redacted] (b) (6)> wrote:

Jon:
[redacted] (b) (6)

Best,
Tony

-----Original Message-----
From: Lorsch, Jon (NIH/NIGMS) [E] [redacted] (b) (6)
Sent: Friday, January 31, 2020 6:57 AM
To: Fauci, Anthony (NIH/NIAID) [E] [redacted] (b) (6)>
Subject: FW: Update from Ming

Tony,
[redacted] (b) (6)

Jon

On 1/31/20, 5:32 AM, "Lei, Ming (NIH/NIGMS) [E]" [redacted] (b) (6)> wrote:

Thanks, Jon,
[redacted] (b) (6)

Ming

Sent from my iPad

> On Jan 31, 2020, at 6:08 PM, Lorsch, Jon (NIH/NIGMS) [E] [redacted] (b) (6) > wrote:
>
> Thanks, Ming. [redacted] (b) (6)
[redacted]
>
> On 1/30/20, 9:10 PM, "Lei, Ming (NIH/NIGMS) [E]" [redacted] (b) (6) > wrote:
>
> Jon,
>
> Here is an update of my situation
[redacted] (b) (6)
>
> Best
> Ming
>

From: Fauci, Anthony (NIH/NIAID) [E]
Sent: Sun, 2 Feb 2020 11:26:13 +0000
To: Collins, Francis (NIH/OD) [E];Tabak, Lawrence (NIH/OD) [E],Wolinetz, Carrie (NIH/OD) [E]
Subject: RE: More on evolution of coronavirus

The Indian paper is really outlandish. Agree about Jon Cohen's nice summary.

From: Collins, Francis (NIH/OD) [E] (b)(6)
Sent: Sunday, February 2, 2020 5:58 AM
To: Fauci, Anthony (NIH/NIAID) [E] (b)(6); Tabak, Lawrence (NIH/OD) [E] (b)(6)>; Wolinetz, Carrie (NIH/OD) [E] (b)(6)>
Subject: More on evolution of coronavirus

In case you haven't seen, attached is the Indian paper claiming HIV sequences have been inserted into 2019-nCoV, which has been roundly debunked.

I found Jon Cohen's piece in Science to be a pretty useful summary:

https://www.sciencemag.org/news/2020/01/mining-coronavirus-genomes-clues-outbreak-s-origins

FC

From: Fauci, Anthony (NIH/NIAID) [E]
Sent: Sun, 2 Feb 2020 04:24:27 +0000
To: Cassetti, Cristina (NIH/NIAID) [E]
Subject: (b) (4)
Attachments:

Please handle.

From: Ryan Muldoon (b) (6)
Sent: Thursday, January 30, 2020 3:33 PM
To: Fauci, Anthony (NIH/NIAID) [E] <(b) (6)
Subject: (b) (4)

Dear Tony,

(b) (4)

Kind regards,
Ryan

PrEPBiopharm

Ryan Muldoon
CEO

Tel: (b) (6)
Email: (b) (6)
www.prepbiopharm.com

From: Fauci, Anthony (NIH/NIAID) [E]
Sent: Sun, 2 Feb 2020 04:21:44 +0000
To: Billet, Courtney (NIH/NIAID) [E]
Subject: FW: Dear Prof. Anthony Fauci, here is a request from MIT Technology Review（Chinese）

NIAID inquiries, please.

From: Tao Sun [redacted]
Sent: Friday, January 31, 2020 2:06 AM
To: Fauci, Anthony (NIH/NIAID) [E] [redacted]
Subject: Re: Dear Prof. Anthony Fauci, here is a request from MIT Technology Review（Chinese）

Dear Prof. Anthony Fauci,

Thank you. Dr. Catharine provided me useful information. As the epidemic develops, here are a few new questions to ask. Chinese readers want to know the opinions of foreign independent experts

1 Some media said Wuhan virus' fatality rate approaches that of the flu, saying that people need not panic. What do you think of this view? In reality, Chinese residents are already scared and are already rushing to buy masks.

2 R0 is a developing number, and it is not easy to calculate. Does it make sense to talk about R0 at this stage?

3 You had talked about asymptomatic patients, and how public health workers should treat asymptomatic people? AND why are some viral infections asymptomatic? Can they wear masks to help prevent epidemics?

4 To what extent will the closure of Wuhan prevent the epidemic?

Looking forward to your reply.

Best

Tao Sun [redacted]> 于2020年1月24日周五 下午3:45写道：

> Dear Prof. Anthony Fauci,
>
> I am Tao Sun, a reporter from Beijing. I am currently writing reports for the MIT Technology Review（Chinese）.
>
> JAMA published your article Coronavirus Infections—More Than Just the Common Cold, and Xinhua News Agency reported this article. Here are some questions I would like to ask you.
>
> 1 Some people think that it is not necessary to develop a new vaccine against SARS or coronavirus in

Wuhan. The reason is that, firstly, there is no commercial interest to pharmaceutical manufacturers, and secondly, such outbreaks may not return after the extinction.
What do you think of these views?

2 For the Wuhan virus vaccine being developed, the epidemic is likely to be eliminated after three months, so is it still necessary to develop a vaccine?

3 You can talk about SARS. How much does a vaccine against SARS actually play?

Looking forward to your reply.

--
TAO SUN

DEEPTECH MIT Technology Review

(b)(6)

suntao@mittrchina.com

7th FL, Tower AB Office Park, 10 Jintong West Road, Chaoyang District, Beijing

http://www.mittrchina.com

--
TAO SUN

DEEPTECH MIT Technology Review

(b)(6)

suntao@mittrchina.com

7th FL, Tower AB Office Park, 10 Jintong West Road, Chaoyang District, Beijing

http://www.mittrchina.com

From: Fauci, Anthony (NIH/NIAID) [E]
Sent: Sun, 2 Feb 2020 04:08:48 +0000
To: Cassetti, Cristina (NIH/NIAID) [E]
Subject: FW: Strategy to attack 2019-nCoV coronavirus

Please handle.

From: Jingyue Ju [redacted]
Sent: Friday, January 31, 2020 12:39 PM
To: Fauci, Anthony (NIH/NIAID) [E] [redacted]; Redfield, Robert R. (CDC/OD) [redacted]
Cc: Mary C Boyce [redacted]; Lee Goldman [redacted]; Shelanski, Michael L. [redacted]
Subject: Strategy to attack 2019-nCoV coronavirus

Dear Drs. Fauci and Redfield,

[redacted]

Please let me know if you would like to receive the full manuscript.

Thank you very much for your consideration.

Sincerely,

Jingyue

Jingyue Ju, Ph.D.
Samuel Ruben-Peter G. Viele Professor of Engineering
Professor of Chemical Engineering and Pharmacology
Director, Center for Genome Technology & Biomolecular Engineering
Columbia University
Northwest Corner Building, Room 1000M1

Phone: [redacted](Office) [redacted] (Cell)
Fax: 212-851-9330
Email: [redacted]

From: Fauci, Anthony (NIH/NIAID) [E]
Sent: Sun, 2 Feb 2020 04:08:13 +0000
To: Arnold Monto
Subject: RE: Coronavirus issues

Arnold:
Thanks for the note. I actually have recommended to several press people that they contact you when they ask for non-government experts. I will continue to do that.
Best,
Tony

From: Arnold Monto [redacted]
Sent: Friday, January 31, 2020 1:03 PM
To: Fauci, Anthony (NIH/NIAID) [E] [redacted]
Subject: Coronavirus issues

Hi, Tony:

As this progresses, and as other news items quiet, I am concerned that this is not being handled like the 2009 pandemic when you and Rich Besser functioned as something like a tag team. This gets really tricky when public health interventions are the way SARS was handled and remain the focus. I am being contacted by the media currently, not because I was in Beijing at the end of SARS but because of general epidemiology credentials I am trying to put things into context based on past history, even though I know other sensat onal information may come to light which will further muddy the waters. And we know who will be the main muddiers

Keiji put me on the 2009 WHO Emergency Committee as a non-governmental person who was not bound by clearances etc I am trying to figure out if I can play that role here I have not yet been contacted by Elizabeth Cohen, our mutual friend, but I am sure I will.The one thing I can do is to try to [redacted]

I am attaching a paper which I wrote post 2009 which shows how the way it was handled adversely affected programs in much of Europe It might be of interest to those who were not around at that time.

Regards

Arnold

Arnold S. Monto, M.D.
Thomas Francis Collegiate Professor
Department of Epidemiology
School of Public Health
University of Michigan

1415 Washington Heights
Ann Arbor, MI 48109 2029
Tel: [redacted]
Fax: (734) 764-3192
[redacted]

From: Fauci, Anthony (NIH/NIAID) [E]
Sent: Sun, 2 Feb 2020 04:01:50 +0000
To: toygar civelek
Subject: RE: Coronavirus

Many thanks!

From: toygar civelek [redacted]
Sent: Friday, January 31, 2020 2:09 PM
To: Fauci, Anthony (NIH/NIAID) [E] [redacted]
Subject: Coronavirus

Dear Mr. Fauci,

I am hoping that this email reaches you as I saw this email address on line on the NIH website.

As we as the public get to hear, read and see with the current coronavirus scare, here in the US and worldwide, it is comforting to have professionals and experts like you, who really know what they are talking about, what is going on, what can be done, timelines, action plans, and inform the public in a reliable and comforting way, yet being very transparent, informing the public on social media.

Kudos to you sir and please keep up the excellent work.

Sincerely,

Mur. Civelek

From: Fauci, Anthony (NIH/NIAID) [E]
Sent: Sun, 2 Feb 2020 04:01:28 +0000
To: Conrad, Patricia (NIH/NIAID) [E]
Cc: Greg Folkers [redacted](b)(6);Barasch, Kimberly (NIH/NIAID) [C];Greg Folkers [redacted](b)(6)
Subject: FW: Business Council - Invitation to speak at the February 20-21, 2020 meeting at the Ritz Carlton (22nd and M St. NW), Washington, D.C.
Attachments: Fauci, Anthony Feb. 2020 Invitation.docx, BC Active Members Jan. 2020.pdf

I definitely want o do this. Please respond. Thanks.

From: Marlene Colucci <mcolucci@businesscouncil.com>
Sent: Friday, January 31, 2020 2:00 PM
To: Fauci, Anthony (NIH/NIAID) [E] [redacted](b)(6)
Cc: Conrad, Patricia (NIH/NIAID) [E] [redacted](b)(6) David Rubenstein <David.Rubenstein@carlyle.com>; MaryPat Decker <marypat.decker@carlyle.com>
Subject: Business Council - Invitation to speak at the February 20-21, 2020 meeting at the Ritz Carlton (22nd and M St. NW), Washington, D.C.

Dear Dr. Fauci,

On behalf of our co-chairs for the winter meeting of The Business Council, David Rubenstein of The Carlyle Group and Ginni Rometty of IBM, we would like to formally invite you to participate in our meeting on February 20-21, 2020 in Washington, D.C. The theme of the meeting is "The Next Decade." (See formal invitation attached as well as list of CEO members).

We would like for you to participate in a 50 minute fireside chat with David Rubenstein (and possibly Dr. Francis Collins) to discuss the current coronavirus as well as what we should expect in the next decade We want to give our CEOs insights into what the next 10 years will bring in terms of detection, diagnosis and treatment of diseases. All conversations are strictly off the record and closed press. We will cover all lodging and transportation.

As you know, The Business Council is comprised of the chief executive officers of the largest global corporations, representing all segments of the economy. We expect at least 150 CEO members, spouses and speakers to be in attendance.

As a participant you and your spouse are also invited to join us for our special reception, dinner and speaker at the REACH (Kennedy Center) on Thursday, February 20 at 6:30pm. It is the best opportunity for you to meet our CEO members and spouses, speakers and other special guests in an informal atmosphere.

If you are interested and available, please let me know. We can also set up a very brief call with you to discuss any additional details and answer any questions you may have. We look forward to hearing from you and would be honored to have you participate with us again.

Warmest regards,

Marlene

Marlene Colucci

EXECUTIVE
DIRECTOR

BUSINESS

T: 202-298-7650
C: (b) (6)
F: 202-785-0296

From: Fauci, Anthony (NIH/NIAID) [E]
Sent: Sun, 2 Feb 2020 03:48:52 +0000
To: Morens, David (NIH/NIAID) [E]
Subject: RE: Potential PHS Officer Deployment

Got it.

From: Morens, David (NIH/NIAID) [E] [redacted]
Sent: Friday, January 31, 2020 4:54 PM
To: Fauci, Anthony (NIH/NIAID) [E] [redacted]; Auchincloss, Hugh (NIH/NIAID) [E] [redacted]>
Subject: Potential PHS Officer Deployment

Tony & Hugh, in follow up, the PHS has informed all PHS officers that as of 2/3 they are subject to deployment for coronavirus work "without supervisory approval", meaning that if needed, officers can be deployed and assigned anywhere, for indefinite periods, by the Assistant Secretary of Health.

We are hearing that many officers, especially physicians and nurses, may be deployed for quarantine efforts and to assist State agencies.

I haven't heard anything personally, but just want to let you know. These deployment orders can come with almost no advance warning, although I don't expect that.

David

David M. Morens, M.D.
CAPT, United States Public Health Service
Senior Advisor to the Director
Office of the Director
National Institute of Allergy and Infectious Diseases
National Institutes of Health
Building 31, Room 7A-03
31 Center Drive, MSC 2520
Bethesda, MD 20892-2520
[redacted] (assistants: Kimberly Barasch; Whitney Robinson)
301 496 4409
[redacted]

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From: Fauci, Anthony (NIH/NIAID) [E]
Sent: Sun, 2 Feb 2020 03:28:01 +0000
To: Cassetti, Cristina (NIH/NIAID) [E]
Subject: FW: Control 2019-nCoV Wuhan

Please handle.

From: [redacted]
Sent: Saturday, February 1, 2020 8:21 PM
To: Fauci, Anthony (NIH/NIAID) [E] [redacted]
Subject: Control 2019-nCoV Wuhan

Tri-Prime Gene Pharmaceutical Co
Beijing China
Cheng YongQing
CEO Tri-Prime Gene.
regards
My name is Robert Vera. I am [redacted] years old. I live in [redacted] Ecuador South America. Here in Ecuador in 1999 in shrimp farms in Ecuador there was a lethal disease among shrimp called the white spot virus syndrome. He appeared in 1999 in Ecuador and made shrimp sick and eliminated them. In China it appeared in 1993. White spot virus syndrome is caused by a virus from the nimaviridae family that infects a vibran parahaemolitycus. I applied more than 10 billion liters of natural and organic biological molecules of my invention for 10 years from 2002 to 2011 in more than 10 thousand hectares of shrimp farms. These molecules have antiviral characteristics and inhibit the glycoproteins of viruses. These glycoproteins are what open cell receptors to infect and replicate. Also these natural molecules invented in [redacted] Ecuador in 2001 inhibit the cytokinins that inflame hepatopancreas. Cytokinins cause the desquamat on of epithelial cells from tubules that end up collapsing to the liver and shrimp pancreas. These viruses infect the parahaemolitycus vibrating bacteria and create an incurable syndrome in the shrimp. In 2002 we defeated this disease and controlled it ... with this Ecuador to produce little shrimp, now in 2019 it is the number one in the world to export shrimp. In the same way, the coronavirus 2019-nCoV Wuhan infects the pneumococci of the lung and the respiratory syndrome develops. Wuhan coronavirus is the seventh among the coronaviruses after sars and mers. Another 4 are simpler in animals that cause the flu. 2019-nCoV causes 2% of deaths. There are 250 dead as of January 31, 2020 and more than 10 thousand infected in China. 20 countries have infections. It is transmitted even without symptoms and its incubation is 2 to 14 days.
We can spray with more than 1000 million liters of these virus inhibitory molecules throughout Wuhan. 1 million hectares (10,000 m2) can be fumigated by fumigation planes as they are made in banana plantations in Ecuador. We can inhibit all viruses with bacteria and biological molecules to inhibit viruses. And we can give them more than 100 million liters to take for more than 100 million liters for humans to more than 100 million inhabitants of the entire province of Hubei in China, so that they do not transmit coronaviruses ... and the seriously ill can also heal They are natural antibacterial, anviral and antifunga biological molecules .. they are immune regenerating cell bioimmunmodulators and immune boosting immune response in immunocompromised people who have diabetes and high blood pressure. Others may have cytokinin and immunoglobulin problems. We can finish with the 2019-nCoV Wuhan in the environment and in humans so be found in the lungs whose epithelial cells are already collapsing with an increase in inflammation and difficulty breathing. We can beat the coronaviruses

throughout China.
Atte
Robert Vera
Graduated from the [redacted] (b) (6)
Whataspp [redacted] (b) (6)

Enviado desde mi smartphone Samsung Galaxy

From: Fauci, Anthony (NIH/NIAID) [E]
Sent: Sat, 1 Feb 2020 23:56:07 +0000
To: Jason Gale
Subject: RE: (BN) Cororavirus Lurking in Feces May Reveal Hidden Risk of Spread

Thanks, Jason.
Best regards,
Tony

From: Jason Gale (BLOOMBERG/ NEWSROOM:) <j.gale@bloomberg.net>
Sent: Saturday, February 1, 2020 6:20 PM
To: Fauci, Anthony (NIH/NIAID) [E] [redacted]
Subject: (BN) Coronavirus Lurking in Feces May Reveal Hidden Risk of Spread

Hello Dr Fauci,
Just been watching the press conference on YouTube with you and your federal colleagues. Thought you might find this interesting, if you have time to breathe let alone read media reports!
All the best and hope to see you at the end of next month.
Jason

Coronavirus Lurking in Feces May Reveal Hidden Risk of Spread
2020-02-01 06:55:00.469 GMT

By Jason Gale
(Bloomberg) -- While doctors have focused on respiratory samples from pneumonia cases to identify coronavirus patients, they might have ignored a less apparent and hidden source of the spread: diarrhea.
The novel coronavirus was detected in the loose stool of the first U.S. case -- a finding that hasn't featured among case reports from Wuhan, China, the epicenter of the outbreak. However, that doesn't surprise scientists who have studied coronaviruses, nor doctors familiar with the bug that caused SARS.
Diarrhea occurred in about 10-20% of patients afflicted with severe acute respiratory syndrome about 17 years ago and was the source of an explosive SARS outbreak in the Amoy Gardens residential complex in Hong Kong.
SARS and Wuhan viruses bind to the same distinctly shaped protein receptors in the body that are expressed in the lungs and intestines, making these organs the primary targets for both viruses, said Fang Li, an associate professor of veterinary and biomedical sciences at the University of Minnesota.
The discovery of the Wuhan virus, dubbed 2019-nCoV, in the fecal material of the 35-year-old man treated at the Providence

Regional Medical Center Everett n Washington is "interesting," said Scott Lindquist, the state epidemiologist for infectious disease at Washington's Department of Health.
"That adds to the knowledge about this," he told reporters on a conference call Friday. "It's not only excreted in your respiratory secretions, it's also secreted in your stool."
Read More: What You Need to Know About the Spreading Coronavirus
Researchers don't yet know how exactly 2019-nCoV spreads from person to person, but suspect it's most likely from coming into contact with virus-containing droplets that could be emitted by an infected person's cough and transferred to their hands or surfaces and objects.

Face Masks

That's led to a run on face masks. But those may be of limited benefit in the event the virus is being transmitted via the fecal-oral route, said John Nicholls, a clinical professor of pathology at the University of Hong Kong
Squat latrines, common in China, lacking covers and hands that aren't washed thoroughly w th soap and water after visiting the bathroom could be a source of virus transmission, said Nicholls, who was part of the research team that solated and characterized the SARS virus.
A virus-laden aerosol plume emanating from a SARS patient with diarrhea was implicated in possibly hundreds of cases at Hong Kong's Amoy Gardens housing complex in 2003. That led the city's researchers to understand the importance of the virus's spread through the gastrointestinal tract, and to recognize both the limitation of face masks and importance of cleanliness and hygiene, Nicholls said in an interview.
"I think in Wuhan, that would be a very likely place where you might get the transmission" from fecal material, he said. "If it's using the same receptor as for SARS, I can't see why it shouldn't be replicating in the gut."
Nicholls and colleagues at the University of Hong Kong are testing laboratory models of human tissues and specimens to understand where and how the Wuhan virus repl cates, he said.

Emerging Evidence

Doctors have reported diarrhea infrequently in 2019-nCoV patientsadmitted to Wuhan hospitals, though it's been more prom nent among reported cases outside the city, including members of a Shenzhen family infected in Wuhan, and more recently in the first U.S. case in Washington state. That patient experienced a two-day bout of diarrhea from which a

samp e tested positive.
The lab in Washington didn't attempt to grow the virus from that specimen, said Lindquist, the state epidemiologist, "because it wasn't going to add anything to his care."
Many of the emerg ng coronaviruses are so-called pneumoenteric viruses, meaning they can replicate both in the respiratory tract and the gastrointestinal system, said Ralph Baric, professor of microbiology and immunology at the Gillings School of Global Public Hea th at the University of North Carolina at Chapel Hill, who has studied coronaviruses for decades.
Overwhelmed by hundreds of severely sick pneumonia patients, doctors in Wuhan might not have focused on any gastric signs, Baric said in a phone nterview.

'So Overwhelmed'

"The Chinese are so overwhelmed at the moment and trying to do a combination of treating patients and dealing with the scope of the outbreak, and then trying to get out papers that describe what's happening," he said.
Any virus in stool is more likely to be present during the acute phase of an infection, occuring before hospita ized patients develop a life-threatening complication known as acute respiratory distress syndrome, Baric said
"I have also spent most of my time focusing on the respiratory tract symptomology rather than the gut because of the relationship between these different emerging viruses and acute respiratory distress syndrome," he said.
Zijian Feng, deputy director general of Chinese Center for Disease Control and Prevention, and colleagues released a report Wednesday on the first 425 Wuhan cases, and noted that early infections that d dn't appear to display typical signs -- such as fever and viral pneumonia -- or had mild symptoms might have been missed.
"The initial focus of case detection was on patients with pneumonia, but we now understand that some patients can present with gastrointestinal symptoms," Feng and co-authors said in their report, which was published in the New Eng and Journal of Medicine.
Emerging evidence of virus-containing diarrhea warrants further invest.gation, said Peter Collignon, a professor of clinical medicine at the Austra ian National University Medical School in Canberra, who advises the Austral an government on infection control.
"This is something new," Collignon said in an interview.
"We presume it's respiratory droplets, but with SARS there was evidence of other routes. We have to keep an open mind."

To contact the reporter on this story:
Jason Gale in Melbourne at j.gale@bloomberg.net
To contact the editors responsible for this story:
Brian Bremner at bbremner@bloomberg.net;
Shamim Adam at sadam2@bloomberg.net

From: Fauci, Anthony (NIH/NIAID) [E]
Sent: Sat, 1 Feb 2020 23:19:46 +0000
To: Cassetti, Cristina (NIH/NIAID) [E]
Subject: FW: article from IIT/India on Coronovirus
Attachments: [redacted]

Please handle.

From: Hong Cai [redacted]
Sent: Saturday, February 1, 2020 5:33 PM
To: WRB Gmail <wrbrody@gmail.com>; Fauci, Anthony (NIH/NIAID) [E] [redacted]
Subject: Re: article from IIT/India on Coronovirus

Dear Fauci,

I knew you must be super busy with the recent Coronavirus outbreak. [redacted]

[redacted]

Thank you for your assistance in advance!

mesabiotech™

Hong Cai, Ph.D
Co-Founder and CEO
Mesa Biotech, Inc.
6190 Cornerstone Court East, Suite 220
San Diego, CA 92121
www.mesabiotech.com
[redacted]

From: WRB [redacted]
Date: Saturday, February 1, 2020 at 7:27 AM

To: "Anthony (NIH/NIAID) Fauci [E]" [redacted]
Cc: Hong Cai [redacted]
Subject: article from IIT/India on Coronovirus

Hi Tony,
I hope you are coping with the chaos around coronavirus.

I am [redacted] but still active, currently chair of Mesa Biotech, a [redacted]

[redacted]

[redacted]

No doubt you have seen, but in case not, I am sending a copy.

Hopefully someone at NIH is trying to replicate this study or to find problems with their methodology.

With best wishes,
Bill

William R. Brody
[redacted] Johns Hopkins University
Salk Institute for Biological Studies

From: Fauci, Anthony (NIH/NIAID) [E]
Sent: Sat, 1 Feb 2020 22:06:26 +0000
To: Jeremy Farrar;Collins, Francis (NIH/OD) [E]
Subject: RE: Teleconference

Thanks, Jeremy. We really appreciate what you are doing here. Pleasure to work with you.
Best,
Tony

From: Jeremy Farrar [redacted]
Sent: Saturday, February 1, 2020 4:00 PM
To: Collins, Francis (NIH/OD) [E] [redacted]
Cc: Fauci, Anthony (NIH/NIAID) [E] [redacted]
Subject: Re: Teleconference

We are altogether as you know! Conversations with you and Tony, and Patrick and others – always great working with you both

From: Francis Collins [redacted]
Date: Saturday, 1 February 2020 at 20:50
To: Jeremy Farrar [redacted]
Cc: "Fauci, Anthony (NIH/NIAID) [E]" [redacted]
Subject: Re: Teleconference

Hi Jeremy,
I can make myself available at any time 24/7 for the call with Tedros Just let me know.
Thanks for your leadership on this critical and sensitive issue.
Francis

Sent from my iPhone

> On Feb 1, 2020, at 3:07 PM, Jeremy Farrar [redacted] wrote:
>
> I have rejoined so a line is open if any help to rejoin.
>
> **From:** Jeremy Farrar [redacted]
> **Date:** Saturday, 1 February 2020 at 19:56
> **To:** "Fauci, Anthony (NIH/NIAID) [E]" [redacted], Francis Collins [redacted], Michael FMedSci [redacted], Patrick Vallance [redacted]
> **Subject:** Re: Teleconference

Can I suggest we shut down the call and then redial in?

Just for 5-10mins?

From: Marion Koopmans (b) (6)
Date: Saturday, 1 February 2020 at 19:43
To: Jeremy Farrar (b) (6)>
Cc: "Fauci, Anthony (NIH/NIAID) [E]" (b) (6)>, Patrick Vallance (b) (6) "Drosten, Christian" (b) (6) (b) (6)>, Edward Holmes (b) (6), (b) (6)>, "Kristian G. Andersen" (b) (6), Paul Schreier (b) (6) <(b) (6) Michael FMedSci (b) (6) Francis Collins (b) (6)>
Subject: Re: Teleconference

(b) (5)

On 1 Feb 2020, at 19:12, Jeremy Farrar (b) (6)> wrote:

Kristen and Eddie have shared this and will talk through it on the call. Thank you.

Hope it will help frame the discussions.

From: Jeremy Farrar (b) (6)>
Date: Saturday, 1 February 2020 at 15:34

1st February (2nd Feb for Eddie)
Information and discussion is shared in total confidence and not to be shared until agreement on next steps.

Dial in details attached.
Please mute phones.
I will be on email throughout – email Paul or I Paul if any problems
If you cannot make it, I will phone you afterwards to update.

One Hour

6am Sydney
8pm CET
7pm GMT
2pm EST
11am PST
(Hope I have the times right!)

Thank you for the series of calls and for agreeing to join this call.

Agenda

- Introduction, focus and desired outcomes - JF
- Summary – KA
- Comments – EH
- Q&A – All
- Summary and next steps - JF

Kristian Anderson
Bob Garry - I have not been able to contact Bob. Please forward if you can.
Christian Drosten
Tony Fauci
Mike Ferguson
Ron Fouchier
Eddie Holmes
Marion Koopmans
Stefan Pohlmann
Andrew Rambaut

Paul Schreier
Patrick Vallance

<Coronavirus sequence comparison[1].pdf>

From: Fauci, Anthony (NIH/NIAID) [E]
Sent: Sat, 1 Feb 2020 22:00:47 +0000
To: Marston, Hilary (NIH/NIAID) [E]
Cc: Conrad, Patricia (NIH/NIAID) [E]
Subject: FW. FOR YOUR REVIEW. Staff Communication on Novel Coronavirus
Attachments: Draft_AllStaff_Novel_Coronavirus_2.1.2020.docx, Draft_OHR_Flexibilities_Novel_Coronavirus_2.1.2020.docx

Please handle this. Thanks

From: Myles, Renate (NIH/OD) [E] [redacted]
Sent: Saturday, February 1, 2020 4:12 PM
To: Fauci, Anthony (NIH/NIAID) [E] [redacted]; Billet, Courtney (NIH/NIAID) [E] [redacted]; Stover, Kathy (NIH/NIAID) [E] [redacted]; Routh, Jennifer (NIH/NIAID) [E] [redacted]
Cc: Tabak, Lawrence (NIH/OD) [E] [redacted], Gottesman, Michael (NIH/OD) [E] [redacted]; Johnson, Alfred (NIH/OD) [E] [redacted]; Berko, Julie (NIH/OD) [E] [redacted]; McGowan, Colleen (NIH/OD/ORS) [E] [redacted]; Burklow, John (NIH/OD) [E] [redacted]; Chandler, Beth (NIH/OD) [E] [redacted]
Subject: FOR YOUR REVIEW: Staff Communication on Novel Coronavirus

Good afternoon, Dr. Fauci and team:

Working in coordination with OHR, ORS, OIR, and others, we have developed two communication products to address questions/concerns that are being raised by NIH staff related to the novel coronavirus. The two products are:

1. All staff email from Dr. Collins to provide general information and guidance to NIH staff
2. QA for use by Executive Officers (not for broad distribution) on human resources flexibilities in response to coronavirus

These products are provided for your review and guidance. We also plan to share with HHS for review/awareness. The current plan to disseminate these products on Monday. We look forward to your input.

Best,
Renate

Renate Myles, MBA
Deputy Director for Public Affairs
Office of Communications and Public Liaison
National Institutes of Health
Tel. [redacted]

From: Fauci, Anthony (NIH/NIAID) [E]
Sent: Sat, 1 Feb 2020 20:03:12 +0000
To: Jeremy Farrar
Subject: RE: Teleconference

Yes

From: Jeremy Farrar [redacted]
Sent: Saturday, February 1, 2020 2:56 PM
To: Fauci, Anthony (NIH/NIAID) [E] [redacted]; Collins, Francis (NIH/OD) [E] [redacted]; Ferguson, Mike [redacted]; Patrick Vallance [redacted]
Subject: Re: Teleconference

Can I suggest we shut down the call and then redial in?

Just for 5-10mins?

From: Marion Koopmans [redacted]
Date: Saturday, 1 February 2020 at 19:43
To: Jeremy Farrar [redacted]
Cc: "Fauci, Anthony (NIH/NIAID) [E]" [redacted], Patrick Vallance [redacted], "Drosten, Christian" [redacted], Edward Holmes [redacted], "Kristian G. Andersen" [redacted], Paul Schreier [redacted], Michael FMedSci [redacted], Francis Collins [redacted]
Subject: Re: Teleconference

[redacted]

On 1 Feb 2020, at 19:12, Jeremy Farrar <[redacted]> wrote:

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Bob Garry - I have not been able to contact Bob. Please forward if you can.
Christian Drosten

Tony Fauci
Mike Ferguson
Ron Fouchier
Eddie Holmes
Marion Koopmans
Stefan Pohlmann
Andrew Rambaut
Paul Schreier
Patrick Vallance

<Coronavirus sequence compar son[1].pdf>

From: Fauci, Anthony (NIH/NIAID) [E]
Sent: Sat, 1 Feb 2020 19:02:40 +0000
To: Auchincloss, Hugh (NIH/NIAID) [E]
Subject: FW: Offering assistance during this public health emergency

Please handle.

From: Albert Rizzo [redacted]
Sent: Friday, January 31, 2020 5:11 PM
To: Fauci, Anthony (NIH/NIAID) [E] [redacted]
Cc: Harold Wimmer [redacted]
Subject: Offering assistance during this public health emergency

Hello Dr. Fauci:

As the coronavirus continues to be a public health emergency, the American Lung Association is closely following guidance and reports being issued by NIAID, WHO, and CDC. Our Association is working to help relay important public health information provided by the various agencies.

As Chief Medical Officer for the American Lung Association, and with the full support of our CEO, Harold Wimmer, and our Board of Directors, I would like to offer the American Lung Association support on strategies that would be appropriate for our organization to participate in or communicate.

I am happy to discuss any potential opportunities in which you feel we may be of assistance.

Sincerely,

Albert A. Rizzo MD FACP FCCP
Chief Medical Officer
American Lung Association
Cell [redacted]

From: Fauci, Anthony (NIH/NIAID) [E]
Sent: Sat, 1 Feb 2020 18:55:58 +0000
To: Cassetti, Cristina (NIH/NIAID) [E]
Subject: FW: Consultancy request Coronavirus

Please handle.

From: Tatsch, Fernando Franciosi [redacted]
Sent: Friday, January 31, 2020 6:39 PM
To: Fauci, Anthony (NIH/NIAID) [E] [redacted]
Cc: Bacher, Hans P <[redacted]>; Vallabh, Bhadrish <[redacted]>
Subject: RE: Consultancy request - Coronavirus

Dear Dr. Fauci,

The below invitation is for a meeting identical to an advisory board

We wonder if a short phone call could be beneficial to offer further context.

With best regards, Fernando Tatsch

FERNANDO TATSCH, MD, MBA
Therapeutic Area Head – HCV / RSV
Global Medical Affairs

2SW 102 08 | 1 N Waukegan Rd | North Chicago, IL 60064
OFFICE [redacted] | **CELL** [redacted] | **EMAIL** [redacted]

abbvie.com

This communication may contain information that is proprietary, confidential, or exempt from disclosure. If you are not the intended recipient, please note that any other dissemination, distribution, use or copying of this communication is strictly prohibited. Anyone who receives this message in error should notify the sender immediately by telephone or by return e-mail and delete it from his or her computer.

From: Tatsch, Fernando Franciosi
Sent: Thursday, January 30, 2020 4:53 PM
To: [redacted]
Subject: Consultancy request - Coronavirus

Dear Dr Fauci,

On behalf of AbbVie, I would like to explore your interest and availability for a scientific consultation.

AbbVie is interested in your scientific view of the 2019-nCoV epidemic.

Your assessment will be very informative for us in the context of [redacted].

If you are interested, we will need a brief CV in order to elaborate a consultation contract.

Once the contract is executed, we would like to invite you for a phone conference which will include few medical AbbVie colleagues.

Looking forward to hearing from you.

With best regards, Fernando Tatsch

FERNANDO TATSCH, MD, MBA
Therapeutic Area Head – HCV / RSV
Global Medical Affairs

2SW 102 08 | 1 N Waukegan Rd | North Chicago, IL 60064
OFFICE [redacted] | **CELL** [redacted] | **EMAIL** [redacted]

abbvie.com

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From: Fauci, Anthony (NIH/NIAID) [E]
Sent: Sat, 1 Feb 2020 18:50:25 +0000
To: Conrad, Patricia (NIH/NIAID) [E]
Cc: Billet, Courtney (NIH/NIAID) [E];Barasch, Kimberly (NIH/NIAID) [C]
Subject: FW: 60 Minutes / Coronavirus

If we can fit this in next week depending on what is hitting the fan, I will do it.

From: Conrad, Patricia (NIH/NIAID) [E] [redacted]
Sent: Friday, January 31, 2020 7:53 PM
To: Fauci, Anthony (NIH/NIAID) [E] [redacted]
Subject: Fwd: 60 Minutes / Coronavirus

Pls advise

Sent from my iPhone

Begin forwarded message:

> **From:** "Stover, Kathy (NIH/NIAID) [E]" [redacted]
> **Date:** January 31, 2020 at 7:52:16 PM EST
> **To:** "Conrad, Patricia (NIH/NIAID) [E]" [redacted]
> **Cc:** "Billet, Courtney (NIH/NIAID) [E]" [redacted], "Routh, Jennifer (NIH/NIAID) [E]" [redacted]
> **Subject: Fwd: 60 Minutes / Coronavirus**
>
> Hi Patty,
> See below. Would Dr. Fauci want to meet with this 60 Mins producer, or shall I suggest an alternative? Note, this isn't for on-camera—it's background for a potential story.
>
> Sent from my iPhone
>
> Begin forwarded message:
>
> > **From:** "Lieberman, Marc E." <MLP@cbsnews.com>
> > **Date:** January 31, 2020 at 5:57:24 PM EST
> > **To:** [redacted]
> > **Subject: 60 Minutes / Coronavirus**
> >
> > Hi, I am a producer at 60 Minutes researching a possible story about the coronavirus outbreak. The effort to find a vaccine strikes me as interesting and I wonder if we might be to chat about it. I am going to be in the DC area next week. Would you have time for a brief meeting either Wednesday morning or Tuesday? Thanks in advance for your help.
> >
> > Best,

Marc Lieberman

Marc Lieberman | Producer | 60 Minutes | w: 212-975-6385 c: (b) (6)
mlp@cbsnews.com

From: Fauci, Anthony (NIH/NIAID) [E]
Sent: Sat, 1 Feb 2020 18:45:22 +0000
To: Folkers, Greg (NIH/NIAID) [E]
Subject: RE: ASF: Dan Chertow invitation

No problem with Dan doing this.

From: Folkers, Greg (NIH/NIAID) [E] [redacted]
Sent: Friday, January 31, 2020 10:05 PM
To: Billet, Courtney (NIH/NIAID) [E], [redacted] Fauci, Anthony (NIH/NIAID) [E] [redacted]
Cc: Marston, Hilary (NIH/NIAID) [E] [redacted]; Conrad, Patricia (NIH/NIAID) [E] [redacted]; Stover, Kathy (NIH/NIAID) [E] [redacted] Routh, Jennifer (NIH/NIAID) [E] [redacted]
Subject: RE: ASF: Dan Chertow invitation

Agree with Courtney

Dan is a good speaker and would represent nih well

From: Billet, Courtney (NIH/NIAID) [E] [redacted]
Sent: Friday, January 31, 2020 9 40 PM
To: Fauci, Anthony (NIH/NIAID) [E] [redacted]
Cc: Marston, Hilary (NIH/NIAID) [E] [redacted] Folkers, Greg (NIH/NIAID) [E] [redacted]; Conrad, Patricia (NIH/NIAID) [E] [redacted]; Stover, Kathy (NIH/NIAID) [E] [redacted]; Routh, Jennifer (NIH/NIAID) [E] [redacted]
Subject: ASF: Dan Chertow invitation

Dan Chertow has been asked to speak at this event, which has some rather high profile participants and media attendance. He would like to do it.

NIH is asking if NIAID is ok with him doing this. [redacted]

Do you agree?

From: "Cohen, Justin (NIH/CC/OD) [E]" [redacted]
Date: Friday, January 31, 2020 at 4:43:08 PM
To: "Myles, Renate (NIH/OD) [E]" [redacted], "Fine, Amanda (NIH/OD) [E]" [redacted], "Routh, Jennifer (NIH/NIAID) [E]" [redacted], "Billet, Courtney (NIH/NIAID) [E]" [redacted]
Cc: "Burklow, John (NIH/OD) [E]" [redacted], "Wojtowicz, Emma (NIH/OD) [E]"

[redacted], "NIAID NEWS (NIH/NIAID)" <NIAIDNEWS@niaid.nih.gov>
Subject: FW: coronavirus speaking opportunity

Obviously given the current environment (not to mention some of the names involved in the event), I want to make sure I'm in lockstep with you al from square one. How would you like me to proceed with the request below? The event is open to the public / press.

From: Chertow, Daniel (NIH/CC/CCMD) [E] [redacted]
Sent: Thursday, January 30, 2020 6:16 PM
To: Cohen, Justin (NIH/CC/OD) [E] [redacted]; Freimuth, Molly (NIH/CC/OC) [E] [redacted]
Cc: Suffredini, Anthony (NIH/CC/CCMD) [E] [redacted]; Masur, Henry (NIH/CC/CCMD) [E] [redacted]
Subject: FW: Hudson Institute speaking request

Dear Justin,

I am checking back in with you regarding the below invitation to speak.

I would like to participate in this if possible.

Please confirm that you have received my email.

Thank you.

Sincerely,

Dan

From: "Asha M. George" <asha.george@biodefensecommission.org>
Date: Thursday, January 30, 2020 at 6:09 PM
To: "Chertow, Daniel (NIH/CC/CCMD) [E]" [redacted]
Subject: Re: Hudson Institute speaking request

Dear Dan,
Sorry, we have changed something slightly. Instead of taking questions directly from the audience, we will obtain questions from the audience via email while the first part of the event occurs, curate them, and then have them available for Senator Lieberman to ask them of the speakers.
Asha

Asha M. George, DrPH
Executive Director

BIPARTISAN COMMISSION ON BIODEFENSE

202.974.2416

biodefensecommission.org

LinkedIn | Twitter | Facebook | Instagram

From: Asha M. George <asha.george@biodefensecommission.org>
Sent: Thursday, January 30, 2020 6:02 PM
To: Chertow, Daniel (NIH/CC/CCMD) [E] (b)(6)
Subject: Re: Hudson Institute speaking request

Dear Dan,
Here are some more specifics regarding the event we will holding at Hudson Institute on novel coronavirus. The meeting will be on February 10th, from 2:00 - 3:30 pm in the Stern Conference Center at Hudson Institute, which is located at 1201 Pennsylvania Avenue, NW, 4th floor, Washington, DC 20004.

We also have the executive conference room reserved from 1:30 pm on. Please plan to arrive around then, so that you can talk with Senator Lieberman and the other speakers before the event starts at 2:00 pm. Just ask the receptionist to direct you where to go.

Here are the speakers:

- Former Senator Joe Lieberman, co-chair, Bipartisan Commission on Biodefense
- Dr. Julie Gerberding, Executive Vice President & Chief Patient Officer, Strategic Communications, Global Public Policy and Population Health, Merck; former Director, Centers for Disease Control and Prevention
- Dr. Billy Karesh, ex officio, Bipartisan Commission on Biodefense; Executive VP, EcoHealth Alliance
- The Honorable Tim Morrison, Senior Fellow, Hudson Institute; former Deputy Assistant to President Trump for National Security; former Specia Assistant to the President and Senior Director for Weapons of Mass Destruction and Biodefense
- Mr. Eric Brown, Senior Fellow, Hudson Institute

- Dr. Daniel S. Chertow (CAPT - US Public Health Service), Head, Emerging Pathogens Section, Critical Care Medicine Department, Clinical Center & Laboratory of Immunoregulation, National Institute of Allergy and Infectious Diseases, National Institutes of Health *(invited)*

The setting will be relatively informal. Scooter Libby will first introduce Senator Lieberman. Then Senator Lieberman will make a short opening statement, and look to Billy to set the stage and talk about the zoonotic nature of the disease, associated disease management considerations, etc., in about 5 minutes. The Senator will then ask each of the other speakers to say a few words from their perspectives. After that, Senator Lieberman will ask some questions of the group, allowing you all to answer and converse. All of this should take about 45 minutes. Then we will allow the audience to ask questions.

We are planning for Senator Lieberman to moderate the discussion and take questions from the audience, but if for some reason he cannot do so, then Billy Karesh will.

I hope you will be able to make it, Dan. Let me know if you have any questions (and if you will be able to make it, of course) and I look forward to seeing you on February 10th.

Asha

Asha M. George, DrPH
Executive Director

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Beyond the blueprint

From: Chertow, Daniel (NIH/CC/CCMD) [E] [redacted]
Sent: Tuesday, January 28, 2020 7:18 PM
To: Asha M George <asha.george@biodefensecommission.org>
Subject: Re: Hudson Institute speaking request

Dear Asha,

Given that this is a public/press event, I will require additional clearance from my organization in order to participate.

I will reach out to them now and get back to you.

Thank you.

Dan

From: "Asha M. George" <asha.george@biodefensecommission.org>
Date: Tuesday, January 28, 2020 at 7:15 PM
To: "Chertow, Daniel (NIH/CC/CCMD) [E]" [redacted]
Subject: Re: Hudson Institute speaking request

Dear Dan,
Thank you! The meeting will be held on February 10th. We are still trying to nail down a time with Senator Lieberman and Governor Ridge, so I will get back to you about that as soon as possible, hopefully tomorrow.

The meeting will be open to the public and to the press, but Hudson Institute is a think tank, so it's never a negative or rowdy crowd.

Asha

Asha M. George, DrPH
Executive Director

BIPARTISAN COMMISSION ON BIODEFENSE

202.974.2416

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Beyond the blueprint

From: Chertow, Daniel (NIH/CC/CCMD) [E] (b) (6)
Sent: Tuesday, January 28, 2020 5:53 PM
To: Asha M. George <asha.george@biodefensecommission.org>
Subject: Re: Hudson Institute speaking request

Dear Asha,

I am available Feb 10th or 13th and would be happy to present to the group.

Please clarify who will be in attendance and if the event is open or closed to press/public as this would require additional clearance on my end.

Thank you.

Sincerely,

Dan

Daniel S. Chertow, MD, MPH, FCCM, FIDSA
CAPT, United States Public Health Service
Head, Emerging Pathogens Section
Critical Care Medicine Department, NIH Clinical Center &
Laboratory of Immunoregulation, NIAID

From: "Asha M. George" <asha.george@biodefensecommission.org>
Date: Monday, January 27, 2020 at 6:09 PM

To: "Chertow, Daniel (NIH/CC/CCMD) [E]" <[redacted]>
Subject: Hudson Institute speaking request

Dear Dr. Chertow,
I am the Executive Director of the Bipartisan Commission on Biodefense, co-chaired by former Senator Joe Lieberman and Governor Tom Ridge. Our fiscal sponsor is Hudson Institute, one of the think tanks here in DC. Hudson Institute's chair of the board of trustees (Sarah May Stern) has asked Hudson Institute to run a 90 minute meeting on the novel coronavirus situation. Hudson has asked us to help them pull a brief meeting together in short order.

Considering your experience on the ground dealing with other outbreaks, Hudson Institute invites you to speak at this event. In addition to one of Hudson Institute's China experts, we are also seeing whether Senator Lieberman and Governor Ridge are available to speak.

Here are the dates they are a looking at: February 6, February 10, and February 13. Could you let me know if you are available and if so, when on those dates?

Thank you for your consideration, Dan. I look forward to hearing from you soon.

Asha

Asha M. George, DrPH
Executive Director

BIPARTISAN COMMISSION ON BIODEFENSE

202.974.2416

biodefensecommission.org

LinkedIn | Twitter | Facebook | Instagram

BIPARTISAN COMMISSION ON BIODEFENSE
Beyond the blueprint

From: Fauci, Anthony (NIH/NIAID) [E]
Sent: Sat, 1 Feb 2020 18:43:31 +0000
To: Kristian G. Andersen
Subject: RE: FW: Science: Mining coronavirus genomes for clues to the outbreak's origins

Thanks, Kristian. Talk soon on the call.

From: Kristian G. Andersen [redacted]
Sent: Friday, January 31, 2020 10:32 PM
To: Fauci, Anthony (NIH/NIAID) [E] [redacted]
Cc: Jeremy Farrar [redacted]
Subject: Re: FW: Science: Mining coronavirus genomes for clues to the outbreak's origins

Hi Tony,

Thanks for sharing. Yes, I saw this earlier today and both Eddie and myself are actually quoted in it. It's a great article, but the problem is that our phylogenetic analyses aren't able to answer whether the sequences are unusual at individual residues, except if they are completely off. On a phylogenetic tree the virus looks totally normal and the close clustering with bats suggest that bats serve as the reservoir. The unusual features of the virus make up a really small part of the genome (<0.1%) so one has to look really closely at all the sequences to see that some of the features (potentially) look engineered.

We have a good team lined up to look very critically at this, so we should know much more at the end of the weekend. I should mention that after discussions earlier today, Eddie, Bob, Mike, and myself all find the genome inconsistent with expectations from evolutionary theory. But we have to look at this much more closely and there are still further analyses to be done, so those opinions could still change.

Best,
Kristian

On Fri, Jan 31, 2020 at 18:47 Fauci, Anthony (NIH/NIAID) [E] [redacted] wrote:

> Jeremy/Kristian:
> This just came out today. You may have seen it. If not, it is of interest to the current discussion.
> Best,
> Tony
>
> **From:** Folkers, Greg (NIH/NIAID) [E] [redacted]
> **Sent:** Friday, January 31, 2020 8:43 PM
> **Subject:** Science: Mining coronavirus genomes for clues to the outbreak's origins

As part of a long-running effort to see what viruses bats harbor, researchers in China collect one from a cave in Guandong.
EcoHealth Alliance

Mining coronavirus genomes for clues to the outbreak's origins

By Jon CohenJan. 31, 2020 , 6:20 PM

attaaaggtt tataccttcc caggtaacaa accaaccaac tttcgatctc ttgtagatct .

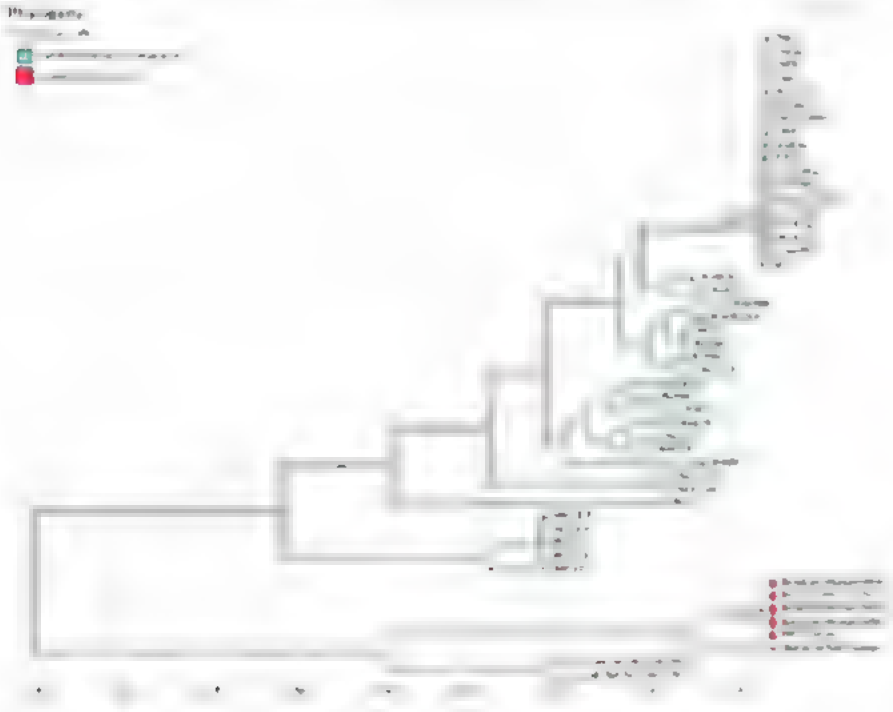
That string of apparent gibberish is anything but: It's a snippet of a DNA sequence from the viral pathogen, dubbed 2019 novel coronavirus (2019-nCoV), that is overwhelming China and frightening the entire world. Scientists are publicly sharing an ever-growing number of full sequences of the virus from patients—53 at last count in the Global Initiative on Sharing All Influenza Data database. These viral genomes are being intensely studied to try to understand the origin of 2019-nCoV and how it fits on the family tree of related viruses found in bats and other species. They have also given glimpses into what this newly discovered virus physically looks like, how it's changing, and how it might be stopped.

"One of the biggest takeaway messages [from the viral sequences] is that there was a single introduction into humans and then human-to-human spread," says Trevor Bedford, a bioinformatics specialist at the University of Washington, Seattle. The role of Huanan Seafood Wholesale Market in Wuhan, China, in spreading 2019-nCoV remains murky, though such sequencing, combined with sampling the market's environment for the presence of the virus, is clarifying that it indeed had an important early role in amplifying the outbreak. The viral sequences, most researchers say, also knock down the idea the pathogen came from a virology institute in Wuhan.

In all, 2019-nCoV has nearly 29,000 nucleotides bases that hold the genetic instruction book to produce the virus Although it's one of the many viruses whose genes are in the form of RNA, scientists convert the viral genome into DNA, with bases known in shorthand as A, T, C, and G, to make it easier to study. Many analyses of 2019-nCoV's sequences have already appeared on virological.org, nextstrain.org, preprint servers like bioRxiv, and even in peer-reviewed journals. The sharing of the sequences by Chinese researchers allowed public health labs around the world to develop their own diagnostics for the virus, which now has been found in 18 other countries. (*Science*'s news stories on the outbreak can be found here.)

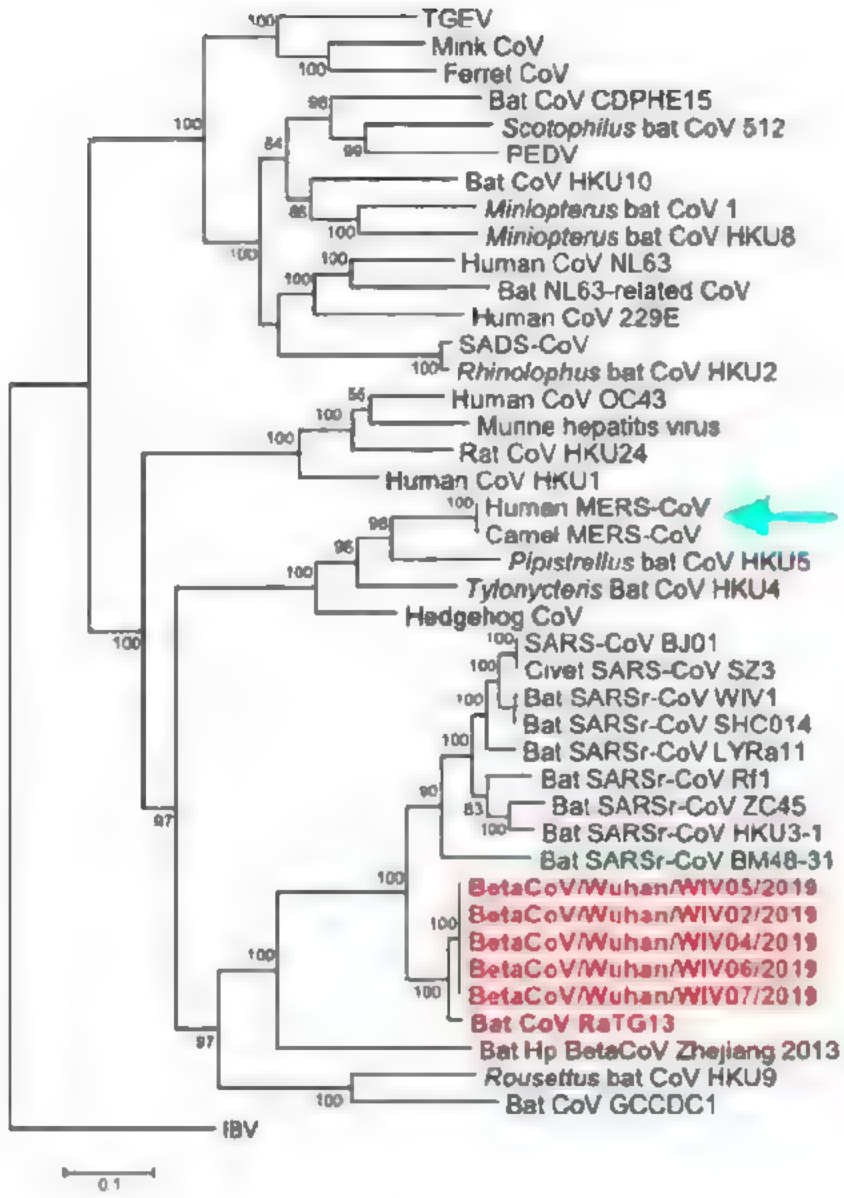
When the first 2019-nCoV sequence became available, researchers placed it on a family tree of known coronaviruses—which are abundant and infect many species—and found that it was most closely related to relatives found in bats. A team led by Shi Zheng-Li, a coronavirus specialist at the Wuhan Institute of Virology, reported on 23 January on bioRxiv that 2019 nCoV's sequence was 96.2% similar to a bat virus and had 79.5% similarity to the coronavirus that causes severe acute respiratory syndrome (SARS), a disease whose initial outbreak was also in China more than 15 years ago. But the SARS coronavirus has a similarly close relationship to bat viruses, and sequence data make a powerful case that it jumped into people from a coronavirus in civets that differed from human SARS viruses by as few as 10 nucleotides. That's one reason why many scientists suspect there's an "intermediary" host species—or several—between bats and 2019-nCoV.

According to Bedford's analysis, the bat coronavirus sequence that Shi Zheng-Li's team highlighted, dubbed RaTG13, differs from 2019-nCoV by nearly 1100 nucleotides. On nextstrain.org, a site he co-founded, Bedford has created coronavirus family trees (example below) that include bat, civet, SARS, and 2019-nCoV sequences. (The trees are interactive—by dragging a computer mouse over them, it's easy to see the differences and similarities between the sequences.)



Bedford's analyses of RaTG13 and 2019-nCoV suggest that the two viruses shared a common ancestor 25 to 65 years ago, an estimate he arrived at by combining the difference in nucleotides between the viruses with the presumed rates of mutation in other coronaviruses. So it likely took decades for RaTG13-like viruses to mutate into 2019-nCoV.

Middle East respiratory syndrome (MERS), another human disease caused by a coronavirus, similarly has a link to bat viruses. But studies have built a compelling case it jumped to humans from camels. And the phylogenetic tree from Shi's bioRxiv paper (below) makes the camel-MERS link easy to see.



The longer a virus circulates in a human populations, the more time it has to develop mutations that differentiate strains in infected people, and given that the 2019 nCoV sequences analyzed to date differ from each other by seven nucleotides at most, this suggests it jumped into humans very recently. But it remains a mystery which animal spread the virus to humans. "There's a very large gray area between viruses detected in bats and the virus now isolated in humans," says Vincent Munster, a virologist at the U.S. National Institute of Allergy and Infectious Diseases who studies coronaviruses in bats, camels, and others species.

Strong evidence suggests the marketplace played an early role in spreading 2019-nCoV, but whether it was the origin of the outbreak remains uncertain. Many of the initially confirmed 2019-nCoV cases—27 of the first 41 in one report, 26 of 47 in another—were connected to the Wuhan market, but up to 45%, including the earliest handful, were not. This raises the possibility that the initial jump into people happened elsewhere.

According to Xinhua, the state-run news agency, "environmental sampling" of the Wuhan seafood market has found evidence of 2019-nCoV. Of the 585 samples tested, 33 were positive for 2019-nCoV and all were in the huge market's western portion, which is where wildlife were sold. "The positive tests from the wet market are hugely important," says Edward Holmes, an evolutionary biologist at the University of Sydney who collaborated with the first group to publicly release a 2019-nCoV sequence. "Such a high rate of positive tests would strongly imply that animals in the market played a key role in the emergence of the virus."

Yet there have been no preprints or official scientific reports on the sampling, so it's not clear which, if any, animals tested positive. "Until you consistently isolate the virus out of a single species, it's really, really difficult to try and determine what the natural host is," says Kristian Andersen, an evolutionary biologist at Scripps Research.

One possible explanation for the confusion about where the virus first entered humans is if there was a batch of recently infected animals sold at different marketplaces. Or an infected animal trader could have transmitted the virus to different people at different markets. Or, Bedford suggests, those early cases could have been infected by viruses that didn't easily transmit and sputtered out. "It would be hugely helpful to have just a sequence or two from the marketplace [environmental sampling] that could illuminate how many zoonoses occurred and when they occurred," Bedford says.

A research group sent fecal and other bodily samples from bats they trapped in caves to the Wuhan Institute of Virology to search for coronaviruses.

EcoHealth Alliance

In the absence of clear conclusions about the outbreak's origin, theories thrive, and some have been scientifically shaky. A sequence analysis led by Wei Ji of Peking University and published online by the *Journal of Medical Virology* received substantial press coverage when it suggested that "snake is the most probable wildlife animal reservoir for the 2019-nCoV." Sequence specialists, however, pilloried it.

Conspiracy theories also abound. A CBC News report about the Canadian government deporting Chinese scientists who worked in a Winnipeg lab that studies dangerous pathogens was distorted on social media to suggest that they were spies who had smuggled out coronaviruses. The Wuhan Institute of Virology, which is the premier lab in China that studies bat and human coronaviruses, has also come under fire. "Experts debunk fringe theory linking China's coronavirus to weapons research," read a headline on a story in *The Washington Post* that focused on the facility.

Concerns about the institute predate this outbreak. *Nature* ran a story in 2017 about it building a new biosafety level 4 lab and included molecular biologist Richard Ebright of Rutgers University, Piscataway, expressing concerns about accidental infections, which he noted repeatedly happened

with lab workers handling SARS in Beijing. Ebright, who has a long history of raising red flags about studies with dangerous pathogens, also in 2015 criticized an experiment in which modifications were made to a SARS-like virus circulating in Chinese bats to see whether it had the potential to cause disease in humans. Earlier this week, Ebright questioned the accuracy of Bedford's calculation that there are at least 25 years of evolutionary distance between RaTG13—the virus held in the Wuhan virology institute—and 2019-nCoV, arguing that the mutation rate may have been different as it passed through different hosts before humans. Ebright tells *Science*Insider that the 2019-nCoV data are "consistent with entry into the human population as a natural accident."

Shi did not reply to emails from *Science*, but her longtime collaborator, disease ecologist Peter Daszak of the EcoHealth Alliance, dismissed Ebright's conjecture. "Every time there's an emerging disease, a new virus, the same story comes out: This is a spillover or the release of an agent or a bioengineered virus," Daszak says. "It's just a shame. It seems humans can't resist controversy and these myths, yet it's staring us right in the face. There's this incredible diversity of viruses in wildlife and we've just scratched the surface. Within that diversity, there will be some that can infect people and within that group will be some that cause illness."

A team of researchers from the Wuhan Institute of Virology and the EcoHealth Alliance have trapped bats in caves all over China, like this one in Guangdong, to sample them for coronaviruses.
EcoHealth Alliance

Daszak and Shi's group have for 8 years been trapping bats in caves around China to sample their feces and blood for viruses. He says they have sampled more than 10,000 bats and 2000 other species. They have found some 500 novel coronaviruses, about 50 of which fall relatively close to the SARS virus on the family tree, including RaTG13—it was fished out of a bat fecal sample they collected in 2013 from a cave in Moglang in Yunnan province. "We cannot assume that just because this virus from Yunnan has high sequence identity with the new one that that's the origin," Daszak says, noting that only a tiny fraction of coronaviruses that infect bats have been discovered. "I expect that once we've sampled and sampled and sampled across southern China and central China that we're going to find many other viruses and some of them will be closer [to 2019-nCoV]."

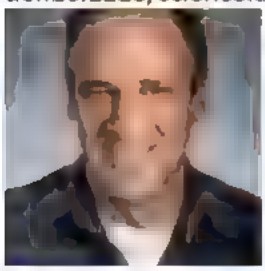
It's not just a "curious interest" to figure out what sparked the current outbreak, Daszak says. "If we don't find the origin, it could still be a raging infection at a farm somewhere, and once this outbreak dies, there could be a continued spillover that's really hard to stop. But the jury is still out on what the real origins of this are."

Posted in:

- Asia/Pacific

- Health
- Coronavirus

doi:10.1126/science.abb1256



Jon Cohen
Jon is a staff writer for *Science*.

- Email Jon
- Twitter

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From: Fauci, Anthony (NIH/NIAID) [E]
Sent: Sat, 1 Feb 2020 18:39:50 +0000
To: Billet, Courtney (NIH/NIAID) [E]
Subject: FW: Possible cure medically to the new coronavirus,corona virus,from wuhan china.
Attachments: medicalcure.docx

NIAID inquiries, please

From: andrew igla[redacted](b)(6)>
Sent: Saturday, February 1, 2020 2:22 AM
To: Fauci, Anthony (NIH/NIAID) [E] [redacted](b)(6)>
Subject: Fw: Possible cure medically to the new coronavirus,corona virus,from wuhan china.

read this email.

From: andrew igla[redacted](b)(6)
Sent: Tuesday, 28 January 2020 6:36 PM
To: secretary@hhs.gov <secretary@hhs.gov>
Subject: Fw: Possible cure medically to the new coronavirus,corona virus,from wuhan china.

From: andrew igla[redacted](b)(6)>
Sent: Sunday, 26 January 2020 9:10 PM
To: secretary@hhs.gov <secretary@hhs.gov>
Subject: Possible cure medically to the new coronavirus,corona virus,from wuhan china.

For secretary Azar this email.

From: andrew igla[redacted](b)(6)>
Sent: Sunday, 26 January 2020 8:59 PM
To: secretary@HHS.gov <secretary@HHS.gov>
Subject: Possible cure medically to the new coronavirus,corona virus,from wuhan china.

From: andrew igla [redacted]
Sent: Sunday, 26 January 2020 1:25

This email is to be sent to the doctors treating medically patients in hospitals involving the new coronavirus,corona virus, from wuhan china.This email contains the possible medical cure to the new coronavirus,corona virus,from wuhan china.URGENT.Discovered from an australian friend of the american people,andrew igla.

This email is about orally taking zovirax and ciproxin together for one day.

Orally taking ciproxin,inhibiting gyrase,orally taking zovirax,inhibiting viral DNA polymerase, together at the same time, stops viral dna moving medically curing viruses in host cells stoping duplicating viral infected cells and stoping a virus invading new uninfected cells.

Attached document contains possible medical cure to new corona virus from wuhan in china to help you win over this virus.

Dear professor and politican,

My name is andrew igla and work as a research science person in dengue virus and anaconda sea snake virus.

Attached is a business document for you.

Thanks ,

Andrew igla. melbourne australia.

From: Fauci, Anthony (NIH/NIAID) [E]
Sent: Sat, 1 Feb 2020 18:35:10 +0000
To: Cassetti, Cristina (NIH/NIAID) [E]
Subject: FW: 2019-nCoV
Attachments: Aminopeptidase N inhibitors and Coronaviruses-LANCET 2003.pdf

Please handle.

From: Kontoyiannis,Dimitrios P [redacted (b)(6)]>
Sent: Saturday, February 1, 2020 1:28 PM
To: Fauci, Anthony (NIH/NIAID) [E] [redacted (b)(6)]>
Subject: FW: 2019-nCoV

Dear Dr Fauci, I enjoyed your recent editorial in JAMA re Coronaviruses
Although the viral disease is not an area of my expertise, you might want to take a look at a hypothesis we had proposed, long ago (back in the era of SARS), re the potential of immune-modulating Coronavirus infection natural history with blockage of aminopeptidase N.
I am not aware of any studies whether aminopeptidase is a receptor of China 2019-nCoV, though.
Sincerely
DPK

Dimitrios P. Kontoyiannis, MD, ScD, PhD (Hon), FACP, FIDSA, FECMM, FAAM, FAAAS
Texas 4000 Distinguished Endowed Professor For Cancer Research
Deputy Head, Division of Internal Medicine
The University of Texas MD Anderson Cancer Center

ECMM Diamond Excellence in Mycology Center/www.ecmm.info

Adj Professor Baylor College of Medicine
Adj Professor UT School of Public Health
Adj Professor University of Houston

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From: Fauci, Anthony (NIH/NIAID) [E]
Sent: Sat, 1 Feb 2020 18:34:43 +0000
To: Tabak, Lawrence (NIH/OD) [E]
Subject: FW: Teleconference
Attachments: Coronavirus sequence comparison[1].pdf

FYI

From: Jeremy Farrar [redacted]
Sent: Saturday, February 1, 2020 1:13 PM
To: Fauci, Anthony (NIH/NIAID) [E] [redacted]; Patrick Vallance [redacted]
Cc: Drosten, Christian [redacted]; Marion Koopmans [redacted]; R.A.M. Fouchier [redacted]; Edward Holmes [redacted]; Andrew Rambaut [redacted]; Kristian G. Andersen [redacted]; Paul Schreier [redacted]; [redacted]; Ferguson, Mike [redacted]; Collins, Francis (NIH/OD) [E] [redacted]
Subject: Re: Teleconference

Kristen and Eddie have shared this and will talk through it on the call. Thank you.

Hope it will help frame the discussions.

From: Jeremy Farrar [redacted]
Date: Saturday, 1 February 2020 at 15:34

1st February (2nd Feb for Eddie)
Information and discussion is shared in total confidence and not to be shared until agreement on next steps.

Dial in details attached.
Please mute phones.
I will be on email throughout – email Paul or I Paul if any problems
If you cannot make it, I will phone you afterwards to update.

One Hour

6am Sydney
8pm CET

7pm GMT
2pm EST
11am PST
(Hope I have the times right!)

Thank you for the series of calls and for agreeing to join this call.

Agenda

- Introduction, focus and desired outcomes - JF
- Summary – KA
- Comments – EH
- Q&A – All
- Summary and next steps - JF

Kristian Anderson
Bob Garry - I have not been able to contact Bob. Please forward if you can.
Christian Drosten
Tony Fauci
Mike Ferguson
Ron Fouchier
Eddie Holmes
Marion Koopmans
Stefan Pohlmann
Andrew Rambaut
Paul Schreier
Patrick Vallance

From: Fauci, Anthony (NIH/NIAID) [E]
Sent: Sat, 1 Feb 2020 18:23:07 +0000
To: Kay Johnson
Subject: RE: thank you for continuing leadership

Kay:
Thank you for your kind note. Much appreciated.
Best regards,
Tony

From: Kay Johnson [redacted]
Sent: Saturday, February 1, 2020 9:15 AM
To: Fauci, Anthony (NIH/NIAID) [E] [redacted]
Subject: thank you for continuing leadership

Dear Dr. Fauci - We met long ago when I was a young health policy staff person at the Children's Defense Fund and you gave a talk on HIV/AIDS at the annual CDF conference around 1984-86.

When I served on the National Vaccine Advisory Committee (NVAC) during the 1990-91 measles epidemic and helped to write the measles whitepaper, I had other occasions to hear your insights.

Since that time, I have frequently heard you on the PBS NewsHour and NPR, I see your perspectives in JAMA and other journals. (For example, this week I heard NPR piece and read JAMA opinion piece on coronavirus.) In every instance, I am struck again by how clearly you articulate the science, the issues for public concern, and options for our nation's response.

While I've worked with many public health leaders and watched others in the media over the past 35 years of my Maternal and Child Health public policy career, I believe no one is better at communications than you. It is in some ways a thankless job. I am writing to say that your continuing leadership and dedication to our nation's health is deeply appreciated by me and millions of others.

Best regards, Kay

Kay Johnson
President, Johnson Group Consult ng, Inc.

vo ce: [redacted]
fax: 802-482-3008
Email: [redacted]

From: Fauci, Anthony (NIH/NIAID) [E]
Sent: Sat, 1 Feb 2020 17:56:42 +0000
To: Cassetti, Cristina (NIH/NIAID) [E]
Cc: Conrad, Patricia (NIH/NIAID) [E]
Subject: FW: article from IIT/India on Coronovirus
Attachments: 20200130.2019-nCOV sequence paper.927871v1.full.pdf

Please handle.

From: WRB Gmail <[redacted]>
Sent: Saturday, February 1, 2020 10:27 AM
To: Fauci, Anthony (NIH/NIAID) [E] [redacted]
Cc: Hong Cai [redacted]
Subject: article from IIT/India on Coronovirus

Hi Tony,
I hope you are coping with the chaos around coronavirus.

I am [redacted] but still active, currently chair of Mesa Biotech, [redacted]

[redacted]

No doubt you have seen, but in case not, I am sending a copy.

Hopefully someone at NIH is trying to replicate this study or to find problems with their methodology.

With best wishes,
Bill

William R. Brody
(b) (6) Johns Hopkins University
Salk Institute for Biological Studies

From: Fauci, Anthony (NIH/NIAID) [E]
Sent: Sat, 1 Feb 2020 17:54:38 +0000
To: Greg Folkers [redacted]
Cc: Conrad, Patricia (NIH/NIAID) [E]
Subject: FW: POLITICO. New FDA chief plans for 'the most serious scenarios' of coronavirus outbreak

We should make a similar slide for upcoming talks.

From: Folkers, Greg (NIH/NIAID) [E] [redacted]
Sent: Saturday, February 1, 2020 10:44 AM
Subject: POLITICO: New FDA chief plans for 'the most serious scenarios' of coronavirus outbreak

EXCLUSIVE

New FDA chief plans for 'the most serious scenarios' of coronavirus outbreak

CBD, drug prices, safety — plus Wuhan coronavirus — make for a crowded agenda for Stephen Hahn.

The FDA for years has mostly stayed out of the debate around drug prices | Jacquelyn Martin, File/AP Photo

By SARAH OWERMOHLE and SARAH KARLIN-SMITH
01/31/2020 04:54 PM EST
Updated: 01/31/2020 05:28 PM EST

New FDA commissioner Stephen Hahn faced a jam-packed agenda: opioids, CBD, vaping, and how to let states safely import drugs. Then the Wuhan coronavirus broke out.

The virus was declared a public health emergency by HHS just a few hours after Hahn's exclusive interview with POLITICO Friday. That kicks the agency into overdrive in multiple roles — helping speed vaccine, drug and diagnostic test development while also trying to avoid shortages of drugs and devices the United States needs that are made in China.

Advertisement

Hahn said there have not been any reports yet of disruption of the supply chain or shortages, but the agency is looking ahead and planning for "what could potentially be the most serious of scenarios." As of now FDA inspections in China are being conducted on a case-by-case basis.

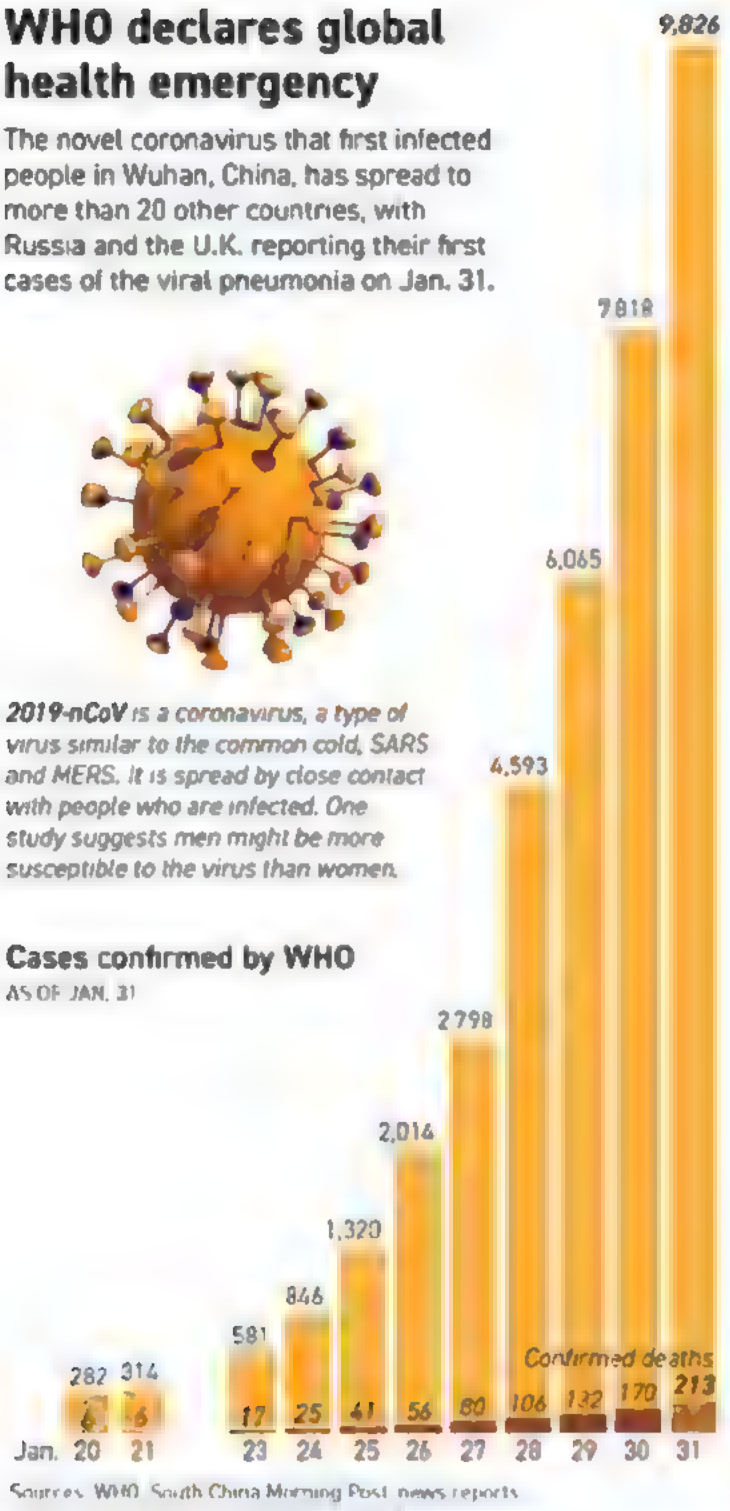
"We are taking on an individual-by-individual basis what's the regulatory need for anything in China ... versus what are the personnel risks associated," he said.

Monitoring the the situation in China could soon get trickier as the State Department expands mandatory evacuation from affected areas of the country.

The coronavirus also broke out in an election year when President Donald Trump wants to deliver on his promise to bring down drug prices — not traditionally the province of the FDA, a regulatory agency designed to focus on safety and efficacy.

"If my patients couldn't get access to something because of cost — that was a real problem for me as a doctor. Now I'm on the other end of that, but what can we do to make sure that that pipeline flows in the best way possible?" said Hahn, 60, an oncologist, researcher and Washington newcomer.

Hahn was confirmed as commissioner on Dec. 18, the night before the administration announced its plan to let states import cheaper medicines from Canada — an approach that prior FDA commissioners opposed over fears it would jeopardize the safety of the drug supply. Trump has endorsed letting states such as Florida do this.



Patterson Clark/POLITICO Pro DataPoint

"There is a compelling reason that the American people want us to consider this and so we're going to have to figure this one out and balance both of those issues," Hahn said, referring to safety and affordability.

The FDA for years has mostly stayed out of the debate around drug prices; the agency doesn't regulate the cost of medicines or health insurance coverage. But Hahn talked up FDA's role in getting prices down by approving more generics, acknowledging that "the American people are expecting us to do more." Trump has touted the FDA's record on boosting competition via generic approvals.

As FDA works on finalizing the importation rule, Hahn said the agency will be open to addressing criticism that states can't save money bringing in drugs from Canada if the pathway is too burdensome. But he stressed safety is tantamount. "Our primary concern is the protection of the drug supply," he said.

Hahn said he has also talked with CMS Administrator Seema Verma about addressing costs of new brand-name products that are approved with limited data sets, similar to the way CMS decides to cover some medical devices. That approach — known as coverage with evidence development — lets CMS cover a new product on the condition that manufacturers keep providing data.

FDA has not done that, but new medicines are increasingly being approved on smaller clinical trials without hard data on clinical benefits — and can come with six-figure price tags.

As an academic, Hahn had co-written an editorial suggesting that payments for newly approved radiation oncology devices could be linked to older products until enough evidence builds up to show that the new products are superior. Only then would manufacturers have more pricing leeway.

"It's a CMS call about coverage with evidence development, but I do think in this world where we are concerned, and rightfully so, about the cost of medicine and health et cetera, that we should be looking at all avenues to approach that," he told POLITICO.

Over the last few years, some critics have said the FDA is overcorrecting and moving too quickly to approve drugs without adequate evidence. But Hahn did not indicate he would put the brakes on.

"At the end of the day there is this balance between the gold standard and being efficient and getting things in people's hands I'm totally confident in the agency's ability to do that."

Hahn must balance all that while leading the FDA's response to the Wuhan crisis, which has heightened some lawmakers' concern about U.S. reliance on Chinese drug manufacturing after incidents of contamination with carcinogens.

"We have to be concerned about the supply chain to make sure that we have enough of what we need if there are any potential outbreaks here," Rep. Susan Brooks (R-Ind.) said after a closed-door briefing Thursday for Energy and Commerce committee members with top health officials. The fact that China manufactures much of the protective medical gear used in U.S. hospitals and clinics "should cause us to be reexamining what we're doing in China versus what should be brought back to this country," she said.

Outside of the coronavirus, a host of thorny regulatory issues await Hahn. Industry and lawmakers have pressed for a clear FDA framework on selling cannabidiol, the popular hemp and marijuana byproduct decriminalized by the 2018 farm bill — and since sold as medicine, dietary supplements and infused in food, cosmetics and skincare products.

"You cannot walk down the street without seeing the products" but there is a dearth of solid data on how safe and effective CBD actually is, said Hahn.

Those CBD challenges have fueled larger discussions about how to better regulate the vast dietary supplement market, where manufacturers often push legal boundaries by making unverified claims about how herbal or homeopathic products can help people

"It will be something else next," said Hahn. We don't want to overstep our bounds but we want to make sure that safe and effective products are in the hands of people."

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From: Fauci, Anthony (NIH/NIAID) [E]
Sent: Sat, 1 Feb 2020 17:51:31 +0000
To: Auchincloss, Hugh (NIH/NIAID) [E]
Subject: RE: Continued

OK. Stay tuned.

-----Original Message-----
From: Auchincloss, Hugh (NIH/NIAID) [E] <[redacted]>
Sent: Saturday, February 1, 2020 11:47 AM
To: Fauci, Anthony (NIH/NIAID) [E] <[redacted]>
Subject: Continued

The paper you sent me says the experiments were performed before the gain of function pause but have since been reviewed and approved by NIH. Not sure what that means since Emily is sure that no Coronavirus work has gone through the P3 framework. She will try to determine if we have any distant ties to this work abroad.

Sent from my iPad

From: Fauci, Anthony (NIH/NIAID) [E]
Sent: Sat, 1 Feb 2020 17:32:40 +0000
To: Cassetti, Cristina (NIH/NIAID) [E]
Subject: FW: 2019 Novel Coronavirus:NanoViricides Confirms It Has Been Working On A Treatment For The Novel Wuhan Coronavirus

Pease handle.

-----Original Message-----
From: Amit Gupta [redacted (b) (6)]>
Sent: Saturday, February 1, 2020 12:23 PM
To: Fauci, Anthony (NIH/NIAID) [E] [redacted (b) (6)]>
Subject: 2019 Novel Coronavirus NanoViricides Confirms It Has Been Working On A Treatment For The Novel Wuhan Coronavirus

Dear Dr. Fauci

Wondering if you have see the coronavirus treatment news. I know you were involved in Ebola previously. You are a great Scientist and Doctor

Coronavirus update: WHO says prepare for local coronavirus outbreaks in other countries;

What do you think about this treatment.
Regards,
Amit

SHELTON, CONNECTICUT -- Thursday, January 30, 2020 -- NanoViricides, Inc. (NYSE Amer., NNVC) (the "Company"), a global leader in the development of highly effective antiviral therapies based on a novel nanomedicines platform, is confirming public disclosures in articles by various industry journals and other articles, that it is working on developing a treatment for the novel coronavirus 2019-nCoV, or the Wuhan coronavirus.

"We have already initiated a program for developing a treatment for the 2019-nCOV," said Anil R. Diwan, PhD, President and Executive Chairman of the Company, adding, "Our platform technology enables possibly the most rapid pathway for new drug development against viral diseases. Of course, we will need support from governmental and international agencies such as the US CDC, WHO, and Chinese CDC to successfully develop these treatments, and, if developed, to get them to the patients in the fastest possible time. At this time, the Company does not have a collaboration with any of these agencies, and we have not been contacted by any of these entities or asked to develop a treatment for this virus. We had collaborations with the CDC and USAMRIID in the past. The Company intends to pursue a relevant collaboration for testing of our drug candidates soon."

The new 2019-nCoV is known to be closely related to the SARS-CoV of 2002-2003 epidemic. In fact it has been shown to use the same cell surface receptor as SARS-CoV, namely ACE2.

"We have already found some lead candidate ligands in our chemical library that can bind to the SARS-CoV spike protein in the same fashion as it binds to the cognate receptor, ACE2, using molecular modeling tools " explained Dr. Diwan, adding "We believe this means we may already be significantly ahead in developing a potential treatment for the new Wuhan virus."

While the Company commissions synthesis of the anti-nCoV nanoviricide drug candidates for testing, some of which are already in our hands, in parallel, the Company has also started preparing for testing of the candidates in cell cultures against certain known BSL2 coronaviruses, including ones that use the ACE2 receptor. Less threatful viruses in the same family that use the same receptor can serve as valid test viruses for screening our broad-spectrum antiviral drug candidates. The Company has its own BSL2-certified virology laboratory at its Shelton campus where

it intends to perform this testing.

The Company has its own cGMP-capable drug manufacturing facil ty. This highly customizable facility can be employed to produce several thousand doses of drugs per batch for treating coronavirus patients, if the Company's drug successfully transitions to obtaining an exploratory treatment approval for use in patients.

The Company's platform technology has already proven that it can result in safe drugs. The Company's first IND-ready clinical drug candidate, namely NV-HHV-101, has successfully undergone a standard battery of Safety and Toxicological testing, as previously disclosed by the Company in press releases and SEC filings.

The Company is building on its previous work against coronaviruses The Company's technology relies on copying the human cell-surface receptor to which the virus binds, and making small chemicals that are called "ligands" that will bind to the virus in the same fashion as the cognate receptor These ligands are chemically attached to a nanomicelle, to create a nanov.ricide®. It is anticipated that when a virus comes in contact with the nanoviricide, not only would it land on the nanoviricide surface, binding to the copious number of ligands presented there, but it would also get entrapped because the nanomicelle polymer would turn around and fuse with the virus lipid envelop, harnessing a well known biophysical phenomenon.

'It is like a 'Venus-Fly-Trap' for the virus," explained Dr. Diwan

The Company focuses on developing broad-spectrum ligands and, thereby, broad-spectrum nanoviricides, copying the specific human cellu.ar receptor. No matter how much a virus mutates, it lands on the same cell surface receptor, and binds in the same fashion. Thus, it is highly unlikely that a virus might escape a nanoviricide against it, in spite of mutations.

In 2014, the Company had worked on developing antiviral treatments against MERS-CoV, and coronaviruses in general. It had developed potential candidates for testing in animal models. The MERS-CoV threat was eclipsed by the Ebola epidemic of 2015. The Company developed viable drug candidates against Ebola in a rapid response time of a few weeks and sent them for testing to USAMRIID. These initial candidates showed significant activity. The Company believes that another cycle of optimization would have resulted in a candidate ready for animal testing under the criteria established by USAMRIID then

During these previous crises, the Company did not have the modern labs, the cGMP drug manufacturing facility or the BSL2 virology testing facility, all of which were commissioned after 2015 at its modern campus in Shelton, CT.

The Company is preparing an IND appl.cation for its first clinical drug candidate to go into human clinical trials. This drug candidate, NV-HHV-101, is a skin cream with the treatment of shingles rash as its first ndication It has shown broad-spectrum activity against HSV-1 (cause of "cold sores"), HSV-2 (cause of "genital ulcers"), and VZV (the varicella-zoster virus, that causes chickenpox in children and immune-compromised humans, and shingles in adults).

NV-HHV-101 has already gone through standard battery of safety-toxico.ogica. testing, wh.ch provides confidence that our platform is capable of creating safe drugs.

The Company has its own cGMP-capable drug manufacturing facility where it intends to produce the drugs for clinical supply.

The Company's top priority remains working on its first IND application for NV-HHV-101 The Company intends to solicit interest and financing from government agencies in order to accelerate its work on the coronaviruses

The market size for the treatment of shingles is estimated at approximately one billion dollars by various estimates. These estimates take into account the Shingrix® vaccine as well as existing vaccines. About 500,000 to 1million cases of shingles occur in the USA alone every year

The market size for our immediate target drugs in the HerpeCide™ program is variously estimated at billions to tens of bill.ons of dollars The Company believes that its dermal topical cream for the treatment of shingles rash will be

its first drug heading .nto clinical trials. The Company believes that additional topical treatment candidates in the HerpeCide™ program, namely, HSV-1 "cold sores" treatment, and HSV-2 "genital ulcers" treatment are expected to follow the shingles cand.date into IND-enabling development and then into human clinical tria s. These additional candidates are based on NV-HHV-101, thereby maximizing return on investments and shareholder value.

The Company develops .ts class of drugs, that we call nanoviricides®, us ng a platform techno.ogy. This approach enables rapid development of new drugs against a number of different viruses. A nanoviricide is a "b ommetic" - it is designed to "look like" the cell surface to the virus. The nanoviricide® technology enables direct attacks at multiple points on a virus particle It is believed that such attacks would lead to the virus partic.e becom.ng ineffective at infecting cells. Antibodies in contrast attack a virus particle at only a maximum of two attachment points per antibody. In addition, the nanovirnc.de technology also simultaneously enables attacking the rapid intracellular reproduction of the virus by incorporating one or more active pharmaceutical ingredients (APIs) within the core of the nanoviricide The nanoviricide technology is the only technology in the world, to the best of our knowledge, that is capable of both (a) attacking extracellular virus, thereby breaking the reinfection cycle, and simultaneously (b) disrupting intracellular production of the virus, thereby enabling complete control of a virus infection.

About NanoViricides

NanoViricides, Inc (www.nanoviricides.com)is a development stage company that is creating special purpose nanomaterials for antiviral therapy. The Company's novel nanoviricide® class of drug candidates are designed to specifically attack enveloped virus particles and to dismantle them. Our lead drug candidate is NV-HHV-101 with its first indication as dermal topical cream for the treatment of shingles rash. The Company is also developing drugs against a number of viral diseases including oral and genital Herpes, viral diseases of the eye including EKC and herpes keratitis, H1N1 swine flu, H5N1 bird flu, seasonal Influenza, HIV, Hepatitis C, Rabies, Dengue fever, and Ebola virus, among others. The Company's technology is based on broad, exclusive, sub-licensable, field licenses to drugs developed in these areas from TheraCour Pharma, Inc. This press release contains forward-looking statements that reflect the Company's current expectation regarding future events. Actual events could differ materially and substantially from those projected herein and depend on a number of factors. Certain statements in this release, and other written or oral statements made by NanoViricides, Inc. are "forward looking statements" within the meaning of Section 27A of the Securities Act of 1933 and Section 21E of the Securities Exchange Act of 1934. You should not place undue reliance on forward-looking statements since they involve known and unknown risks, uncerta nties and other factors which are, in some cases, beyond the Company's control and which could, and likely will, materially affect actual results, levels of activity, performance or achievements. The Company assumes no obligation to publicly update or revise these forward-looking statements for any reason, or to update the reasons actual results could differ materia.ly from those anticipated in these forward-looking statements, even if new information becomes available in the future. Important factors that could cause actual results to differ materially from the company s expectations include, but are not limited to, those factors that are disclosed under the heading 'Risk Factors" and elsewhere in documents filed by the company from time to time with the United States Securities and Exchange Commission and other regulatory authorities Although it is not possible to predict or identify a.l such factors, they may include the following: demonstration and proof of principle in precl.nical trials that a nanoviricide is safe and effective; successful development of our product candidates, our ability to seek and obtain regulatory approvals, including with respect to the indications we are seeking, the successful commerc.alizat.on of our product candicates; and market acceptance of our products. FDA refers to US Food and Drug Administrat.on IND application refers to "Investigational New Drug" application. CMC refers to "Chemistry, Manufacture, and Controls".

Contact.
NanoVincides, Inc.
info@nanoviricides.com

From: Fauci, Anthony (NIH/NIAID) [E]
Sent: Sat, 1 Feb 2020 13:19:06 +0000
To: Tabak, Lawrence (NIH/OD) [E]
Subject: FW: IMPORTANT
Attachments: Baric, Shi et al - Nature medicine - SARS Gain of function.pdf

Here it is

Anthony S. Fauci, MD
Director
National Institute of Allergy and Infectious Diseases
Building 31, Room 7A-03
31 Center Drive, MSC 2520
National Institutes of Health
Bethesda, MD 20892-2520
Phone: (b) (6)
FAX: (301) 496-4409
E-mail. (b) (6)
The information in this e-mail and any of its attachments is confidential and may contain sensitive information. It should not be used by anyone who is not the original intended recipient. If you have received this e-mail in error please inform the sender and delete it from your mailbox or any other storage devices. The National Institute of Allergy and Infectious Diseases (NIAID) shall not accept liability for any statements made that are the sender's own and not expressly made on behalf of the NIAID by one of its representatives.

From: Fauci, Anthony (NIH/NIAID) [E]
Sent: Sat, 1 Feb 2020 12:43:22 +0000
To: Marston, Hilary (NIH/NIAID) [E]
Cc: Conrad, Patricia (NIH/NIAID) [E]
Subject: FW. 2019 novel Coronavirus Global research and innovation forum. towards a research roadmap Feb 11-12, 2020 Geneva WHO HQ
Attachments: Global Research Forum dv2AMHR AM.PDF

We need to talk about this later in the day.. I am on Conference calls now. I will call you later. Apparently Soumya is reaching out separately to other people in NIAID.

From: SWAMINATHAN, Soumya [redacted]
Sent: Saturday, February 1, 2020 7:19 AM
To: Fauci, Anthony (NIH/NIAID) [E] [redacted]
Subject: 2019 novel Coronavirus Global research and innovation forum: towards a research roadmap Feb 11-12, 2020 Geneva WHO HQ

Dear Tony

I am delighted to inform you that WHO is organizing a global research partners forum on February 11th and 12th in Geneva, to discuss research priorities related to the novel Corona virus. The expected outcome is a research roadmap with clearly defined priorities and a governance framework to take each thematic area forward. Several thematic areas will be considered at the meeting, namely: virus, diagnostics; natural history and transmission; clinical; therapeutics; vaccines; ethics; regulatory science; animal health; data/samples analysis and sharing and; social sciences. We believe that this meeting will be critical in consensus building on the most important research questions, as well as in building global partnerships and collaborations to take this work forward.

This meeting is being organized in partnership with GLOPID R and is being supported by the Bill and Melinda Gates foundation, DFID, Wellcome Trust and several other partners. The secretariat within WHO is the R&D blueprint, co-chaired by Dr Mike Ryan and myself.

As the head of an agency that would play an important role in addressing this new viral outbreak, e ther by undertaking or funding research, or both, I take great pleasure in inviting you to this meeting. I apologize for the short notice, but you will understand that we have had to plan this in the past few days, keeping in mind the evolving situation.

Kindly let me know if you (or your nominee) will be able to attend and if you need any support from us. Please copy [redacted] and [redacted] in your response.

With best wishes,
Soumya

Dr Soumya Swaminathan

Chief Scientist

PS: Sorry if this is a duplication – just want to make sure the key people receive the invite. Sorry about the short notice!

From: Fauci, Anthony (NIH/NIAID) [E]
Sent: Sat, 1 Feb 2020 12:32:57 +0000
To: [redacted]
Subject: FW: 2019 novel Coronavirus Global research and innovation forum: towards a research roadmap Feb 11-12, 2020 Geneva WHO HQ
Attachments: Global Research Forum dv2AMHR AM.PDF

Cliff:
Whom should I nominate? See yellow highlight
Tony

From: SWAMINATHAN, Soumya <[redacted]>
Sent: Saturday, February 1, 2020 7:19 AM
To: Fauci, Anthony (NIH/NIAID) [E] <[redacted]>
Subject: 2019 novel Coronavirus Global research and innovation forum: towards a research roadmap Feb 11-12, 2020 Geneva WHO HQ

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With best wishes,
Soumya

Dr Soumya Swaminathan

Chief Scientist

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From: Fauci, Anthony (NIH/NIAID) [E]
Sent: Sat, 1 Feb 2020 12:29:36 +0000
To: Auchincloss, Hugh (NIH/NIAID) [C] [redacted]
Cc: [redacted]
Subject: FW. Science. Mining coronavirus genomes for clues to the outbreak's origins

As per my prior e-mail.

From: Folkers, Greg (NIH/NIAID) [E] [redacted]
Sent: Friday, January 31, 2020 8:43 PM
Subject: Science: Mining coronavirus genomes for clues to the outbreak's origins

As part of a long-running effort to see what viruses bats harbor, researchers in China collect one from a cave in Guandong.
EcoHealth Alliance

Mining coronavirus genomes for clues to the outbreak's origins

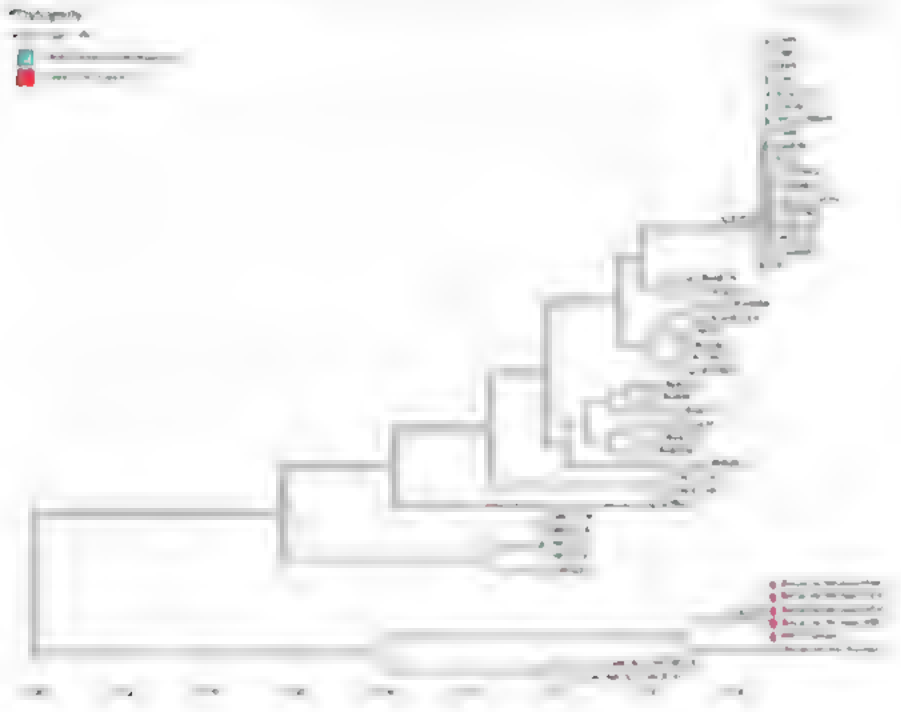
By Jon CohenJan. 31, 2020 , 6:20 PM
attaaaggtt tataccttcc caggtaacaa accaaccaac tttcgatctc ttgtagatct ...
That string of apparent gibberish is anything but: It's a snippet of a DNA sequence from the viral pathogen, dubbed 2019 novel coronavirus (2019-nCoV), that is overwhelming China and frightening the entire world. Scientists are publicly sharing an ever-growing number of full sequences of the virus from patients—53 at last count in the Global Initiative on Sharing All Influenza Data database. These viral genomes are being intensely studied to try to understand the origin of 2019-nCoV and how it fits on the family tree of related viruses found in bats and other species. They have also given glimpses into what this newly discovered virus physically looks like, how it's changing, and how it might be stopped.
"One of the biggest takeaway messages [from the viral sequences] is that there was a single introduction into humans and then human-to-human spread," says Trevor Bedford, a bioinformatics specialist at the University of Washington, Seattle. The role of Huanan Seafood Wholesale Market in

Wuhan, China, in spreading 2019-nCoV remains murky, though such sequencing, combined with sampling the market's environment for the presence of the virus, is clarifying that it indeed had an important early role in amplifying the outbreak. The viral sequences, most researchers say, also knock down the idea the pathogen came from a virology institute in Wuhan.

In all, 2019-nCoV has nearly 29,000 nucleotides bases that hold the genetic instruction book to produce the virus. Although it's one of the many viruses whose genes are in the form of RNA, scientists convert the viral genome into DNA, with bases known in shorthand as A, T, C, and G, to make it easier to study. Many analyses of 2019-nCoV's sequences have already appeared on virological.org, nextstrain.org, preprint servers like bioRxiv, and even in peer-reviewed journals. The sharing of the sequences by Chinese researchers allowed public health labs around the world to develop their own diagnostics for the virus, which now has been found in 18 other countries. (*Science*'s news stories on the outbreak can be found here.)

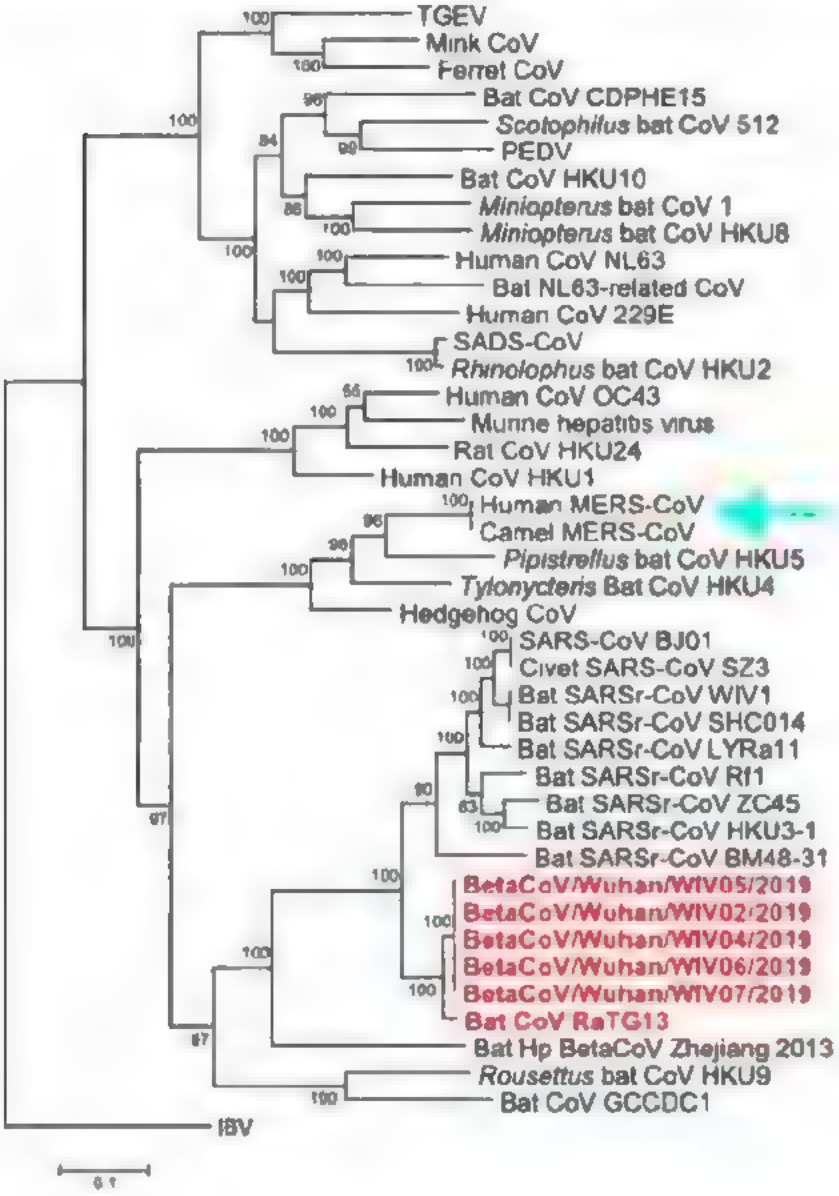
When the first 2019-nCoV sequence became available, researchers placed it on a family tree of known coronaviruses—which are abundant and infect many species—and found that it was most closely related to relatives found in bats. A team led by Shi Zheng-Li, a coronavirus specialist at the Wuhan Institute of Virology, reported on 23 January on bioRxiv that 2019-nCoV's sequence was 96.2% similar to a bat virus and had 79.5% similarity to the coronavirus that causes severe acute respiratory syndrome (SARS), a disease whose initial outbreak was also in China more than 15 years ago. But the SARS coronavirus has a similarly close relationship to bat viruses, and sequence data make a powerful case that it jumped into people from a coronavirus in civets that differed from human SARS viruses by as few as 10 nucleotides. That's one reason why many scientists suspect there's an "intermediary" host species—or several—between bats and 2019-nCoV.

According to Bedford's analysis, the bat coronavirus sequence that Shi Zheng-Li's team highlighted, dubbed RaTG13, differs from 2019-nCoV by nearly 1100 nucleotides. On nextstrain.org, a site he co-founded, Bedford has created coronavirus family trees (example below) that include bat, civet, SARS, and 2019-nCoV sequences. (The trees are interactive—by dragging a computer mouse over them, it's easy to see the differences and similarities between the sequences.)



Bedford's analyses of RaTG13 and 2019-nCoV suggest that the two viruses shared a common ancestor 25 to 65 years ago, an estimate he arrived at by combining the difference in nucleotides between the viruses with the presumed rates of mutation in other coronaviruses. So it likely took decades for RaTG13 like viruses to mutate into 2019-nCoV.

Middle East respiratory syndrome (MERS), another human disease caused by a coronavirus, similarly has a link to bat viruses. But studies have built a compelling case it jumped to humans from camels. And the phylogenetic tree from Shi's bioRxiv paper (below) makes the camel-MERS link easy to see.



The longer a virus circulates in a human populations, the more time it has to develop mutations that differentiate strains in infected people, and given that the 2019-nCoV sequences analyzed to date differ from each other by seven nucleotides at most, this suggests it jumped into humans very recently. But it remains a mystery which animal spread the virus to humans. "There's a very large gray area between viruses detected in bats and the virus now isolated in humans," says Vincent Munster, a virologist at the

U.S. National Institute of Allergy and Infectious Diseases who studies coronaviruses in bats, camels, and others species.

Strong evidence suggests the marketplace played an early role in spreading 2019-nCoV, but whether it was the origin of the outbreak remains uncertain. Many of the initially confirmed 2019-nCoV cases—27 of the first 41 in one report, 26 of 47 in another—were connected to the Wuhan market, but up to 45%, including the earliest handful, were not. This raises the possibility that the initial jump into people happened elsewhere.

According to Xinhua, the state-run news agency, "environmental sampling" of the Wuhan seafood market has found evidence of 2019-nCoV. Of the 585 samples tested, 33 were positive for 2019-nCoV and all were in the huge market's western portion, which is where wildlife were sold. "The positive tests from the wet market are hugely important," says Edward Holmes, an evolutionary biologist at the University of Sydney who collaborated with the first group to publicly release a 2019-nCoV sequence. "Such a high rate of positive tests would strongly imply that animals in the market played a key role in the emergence of the virus."

Yet there have been no preprints or official scientific reports on the sampling, so it's not clear which, if any, animals tested positive. "Until you consistently isolate the virus out of a single species, it's really, really difficult to try and determine what the natural host is," says Kristian Andersen, an evolutionary biologist at Scripps Research.

One possible explanation for the confusion about where the virus first entered humans is if there was a batch of recently infected animals sold at different marketplaces. Or an infected animal trader could have transmitted the virus to different people at different markets. Or, Bedford suggests, those early cases could have been infected by viruses that didn't easily transmit and sputtered out. "It would be hugely helpful to have just a sequence or two from the marketplace [environmental sampling] that could illuminate how many zoonoses occurred and when they occurred," Bedford says.

A research group sent fecal and other bodily samples from bats they trapped in caves to the Wuhan Institute of Virology to search for coronaviruses.

EcoHealth Alliance

In the absence of clear conclusions about the outbreak's origin, theories thrive, and some have been scientifically shaky. A sequence analysis led by Wei Ji of Peking University and published online by the *Journal of Medical Virology* received substantial press coverage when it suggested that "snake is the most probable wildlife animal reservoir for the 2019-nCoV." Sequence specialists, however, pilloried it.

Conspiracy theories also abound. A CBC News report about the Canadian government deporting Chinese scientists who worked in a Winnipeg lab that studies dangerous pathogens was distorted on social media to suggest that they were spies who had smuggled out coronaviruses. The Wuhan Institute of

Virology, which is the premier lab in China that studies bat and human coronaviruses, has also come under fire. "Experts debunk fringe theory linking China's coronavirus to weapons research," read a headline on a story in *The Washington Post* that focused on the facility.

Concerns about the institute predate this outbreak. *Nature* ran a story in 2017 about it building a new biosafety level 4 lab and included molecular biologist Richard Ebright of Rutgers University, Piscataway, expressing concerns about accidental infections, which he noted repeatedly happened with lab workers handling SARS in Beijing. Ebright, who has a long history of raising red flags about studies with dangerous pathogens, also in 2015 criticized an experiment in which modifications were made to a SARS-like virus circulating in Chinese bats to see whether it had the potential to cause disease in humans. Earlier this week, Ebright questioned the accuracy of Bedford's calculation that there are at least 25 years of evolutionary distance between RaTG13—the virus held in the Wuhan virology institute—and 2019-nCoV, arguing that the mutation rate may have been different as it passed through different hosts before humans. Ebright tells *Science*Insider that the 2019-nCoV data are "consistent with entry into the human population as a natural accident."

Shi did not reply to emails from *Science*, but her longtime collaborator, disease ecologist Peter Daszak of the EcoHealth Alliance, dismissed Ebright's conjecture. "Every time there's an emerging disease, a new virus, the same story comes out: This is a spillover or the release of an agent or a bioengineered virus," Daszak says. "It's just a shame. It seems humans can't resist controversy and these myths, yet it's staring us right in the face. There's this incredible diversity of viruses in wildlife and we've just scratched the surface. Within that diversity, there will be some that can infect people and within that group will be some that cause illness."

A team of researchers from the Wuhan Institute of Virology and the EcoHealth Alliance have trapped bats in caves all over China, like this one in Guangdong, to sample them for coronaviruses.
EcoHealth Alliance

Daszak and Shi's group have for 8 years been trapping bats in caves around China to sample their feces and blood for viruses. He says they have sampled more than 10,000 bats and 2000 other species. They have found some 500 novel coronaviruses, about 50 of which fall relatively close to the SARS virus on the family tree, including RaTG13—it was fished out of a bat fecal sample they collected in 2013 from a cave in Mojiang in Yunnan province. "We cannot assume that just because this virus from Yunnan has high sequence identity with the new one that that's the origin," Daszak says, noting that only a tiny fraction of coronaviruses that infect bats have been discovered. "I expect that once we've sampled and sampled and sampled across southern China and central China that we're going to find many other viruses and some of them will be closer [to 2019-nCoV]."

It's not just a "curious interest" to figure out what sparked the current outbreak, Daszak says. "If we don't find the origin, it could still be a raging infection at a farm somewhere, and once this outbreak dies, there could be a continued spillover that's really hard to stop. But the jury is still out on what the real origins of this are."

Posted in.

- As a/Pacific
- Health
- Coronavirus

doi:10.1126/science.abb1256

Jon Cohen

Jon is a staff writer for *Science*.

- Email Jon
- Twitter

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From: Fauci, Anthony (NIH/NIAID) [E]
Sent: Sat, 1 Feb 2020 12:29:01 +0000
To: Auchincloss, Hugh (NIH/NIAID) [C] (b)(6)
Cc: (b)(6)
Subject: IMPORTANT
Attachments: Baric, Shi et al - Nature medicine - SARS Gain of function.pdf

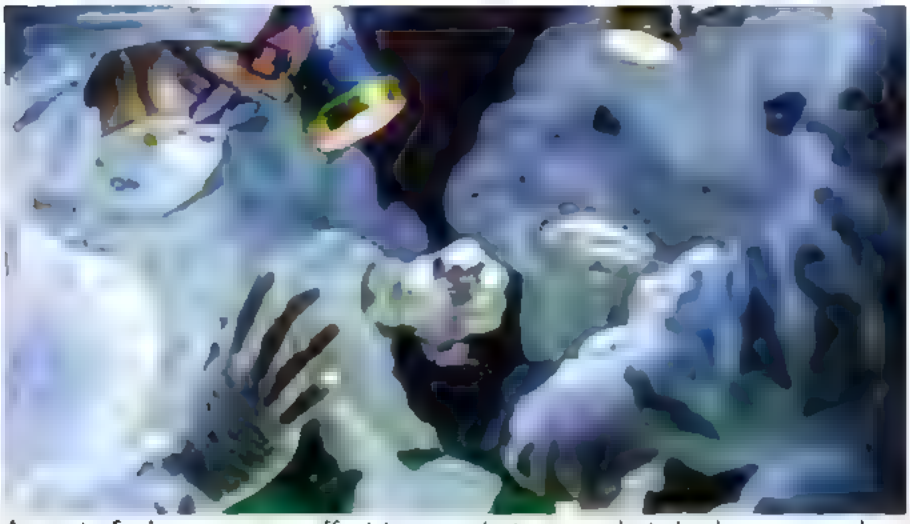
Hugh:
It is essential that we speak this AM. Keep your cell phone on. I have a conference call at 7:45 AM with Azar. It likely will be over at 8:45 AM. Read this paper as well as the e-mail that I will forward to you now. You will have tasks today that must be done.
Thanks,
Tony

Anthony S. Fauci, MD
Director
National Institute of Allergy and Infectious Diseases
Building 31, Room 7A-03
31 Center Drive, MSC 2520
National Institutes of Health
Bethesda, MD 20892-2520
Phone: (b)(6)
FAX: (301) 496-4409
E-mail: (b)(6)
The information in this e-mail and any of its attachments is confidential and may contain sensitive information. It should not be used by anyone who is not the original intended recipient. If you have received this e-mail in error please inform the sender and delete it from your mailbox or any other storage devices. The National Institute of Allergy and Infectious Diseases (NIAID) shall not accept liability for any statements made that are the sender's own and not expressly made on behalf of the NIAID by one of its representatives.

From: Fauci, Anthony (NIH/NIAID) [E]
Sent: Sat, 1 Feb 2020 02:48:59 +0000
To: Kadlec, Robert (OS/ASPR/IO)
Cc: [redacted]
Subject: FW. Science. Mining coronavirus genomes for clues to the outbreak's origins

Bob:
This just came out today. Gives a balanced view.
Best,
Tony

From: Folkers, Greg (NIH/NIAID) [E] [redacted]>
Sent: Fr day, January 31, 2020 8:43 PM
Subject: Science: Mining coronavirus genomes for clues to the outbreak's origins



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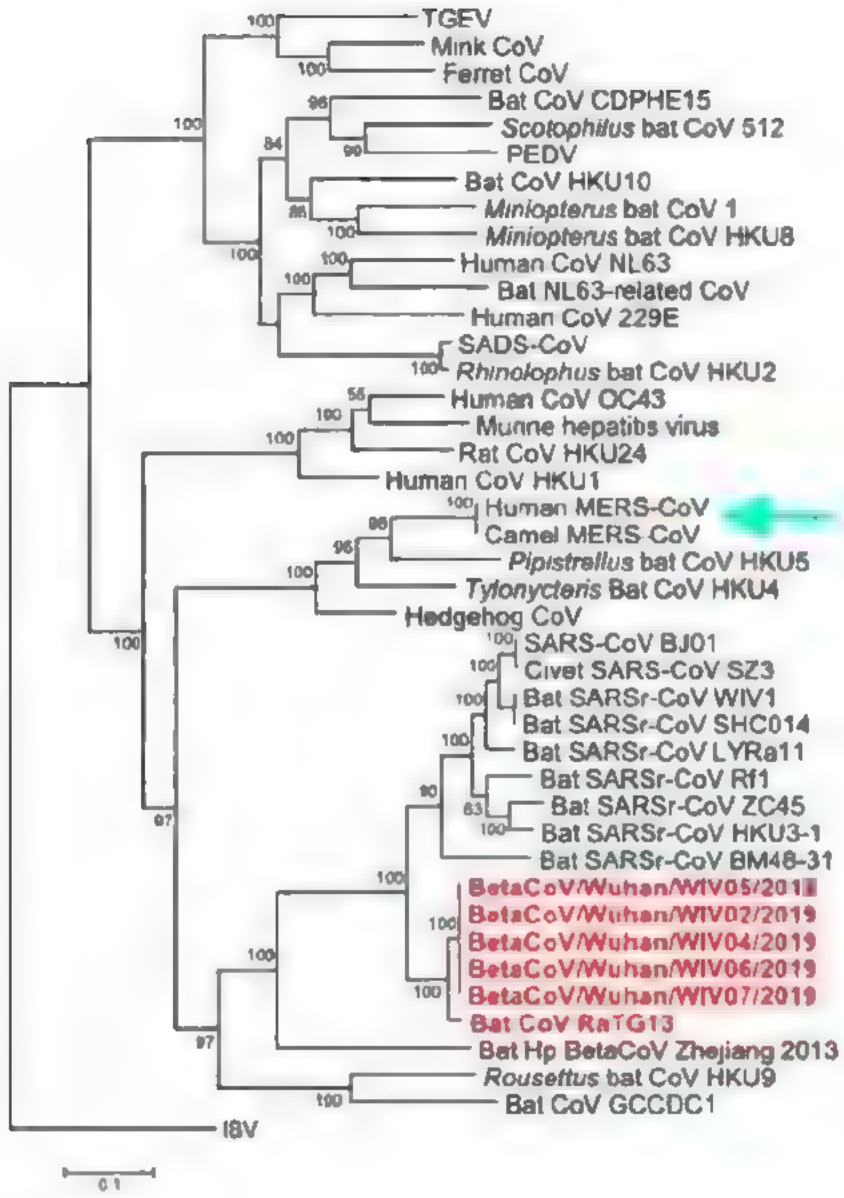

The longer a virus circulates in a human populations, the more time it has to develop mutations that differentiate strains in infected people, and given that the 2019 nCoV sequences analyzed to date differ from each other by seven nucleotides at most, this suggests it jumped into humans very recently. But it remains a mystery which animal spread the virus to humans. "There's a very large gray area between viruses detected in bats and the virus now isolated in humans," says Vincent Munster, a virologist at the U.S. National Institute of Allergy and Infectious Diseases who studies coronaviruses in bats, camels, and others species.

Strong evidence suggests the marketplace played an early role in spreading 2019-nCoV, but whether it was the origin of the outbreak remains uncertain. Many of the initially confirmed 2019-nCoV cases—27 of the first 41 in one report, 26 of 47 in another—were connected to the Wuhan market, but up to 45%, including the earliest handful, were not. This raises the possibility that the initial jump into people happened elsewhere.

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Yet there have been no preprints or official scientific reports on the sampling, so it's not clear which, if any, animals tested positive. "Until you consistently isolate the virus out of a single species, it's really, really difficult to try and determine what the natural host is," says Kristian Andersen, an evolutionary biologist at Scripps Research.

One possible explanation for the confusion about where the virus first entered humans is if there was a batch of recently infected animals sold at different marketplaces. Or an infected animal trader could have transmitted the virus to different people at different markets. Or, Bedford suggests, those early cases could have been infected by viruses that didn't easily transmit and sputtered out. "It would be hugely helpful to have just a sequence or two from the marketplace [environmental sampling] that could illuminate how many zoonoses occurred and when they occurred," Bedford says.

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EcoHealth Alliance

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Sh did not reply to emails from *Science*, but her longtime collaborator, disease ecologist Peter Daszak of the EcoHealth Alliance, dismissed Ebright's conjecture. "Every time there's an emerging disease, a new virus, the same story comes out. This is a spillover or the release of an agent or a bioengineered virus," Daszak says. "It's just a shame. It seems humans can't resist controversy and these myths, yet it's staring us right in the face. There's this incredible diversity of viruses in wildlife and we've just scratched the surface. Within that diversity, there will be some that can infect people and within that group will be some that cause illness."

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Posted in:

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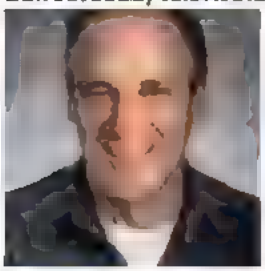

Jon Cohen
Jon is a staff writer for *Science*.

- Email Jon
- Twitter

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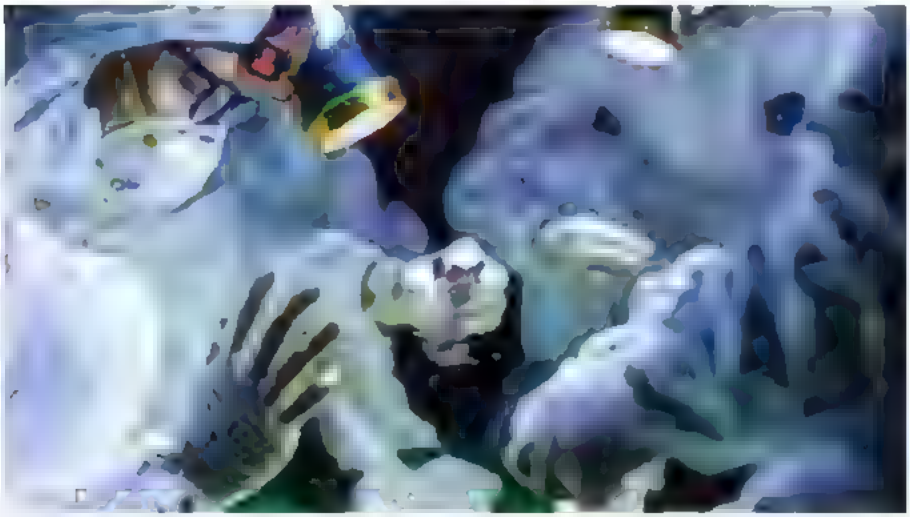
From: Fauci, Anthony (NIH/NIAID) [E]
Sent: Sat, 1 Feb 2020 02:46:21 +0000
To: Mascola, John (NIH/VRC) [E]
Subject: FW: Science: Mining coronavirus genomes for clues to the outbreak's origins

Here is the Jon Cohen article.

From: Folkers, Greg (NIH/NIAID) [E] (b)(6)
Sent: Fr day, January 31, 2020 8:43 PM
Subject: Science: Mining coronavirus genomes for clues to the outbreak's origins



As part of a long-running effort to see what viruses bats harbor, researchers in China collect one from a cave in Guandong.
EcoHealth Alliance

Mining coronavirus genomes for clues to the outbreak's origins

By Jon CohenJan. 31, 2020 , 6:20 PM
attaaaggtt tataccttcc caggtaacaa accaaccaac tttcgatctc ttgtagatct ...
That string of apparent gibberish is anything but: It's a snippet of a DNA sequence from the viral pathogen, dubbed 2019 novel coronavirus (2019-nCoV), that is overwhelming China and frightening the entire wor d. Scientists are publicly sharing an ever-growing number of full sequences of the virus from patients—53 at last count in the Global Initiative on Sharing All Influenza Data database. These viral genomes are being intensely studied to try to understand the origin of 2019-nCoV and how it fits on the family tree of related viruses found in bats and other species. They have also given glimpses into what this newly discovered virus physically looks like, how it's changing, and how it might be stopped
"One of the biggest takeaway messages [from the viral sequences] is that there was a single introduction into humans and then human-to-human spread," says Trevor Bedford, a bioinformatics specialist at the University of Washington, Seattle. The role of Huanan Seafood Wholesale Market in Wuhan, China, in spreading 2019-nCoV remains murky, though such sequencing, combined with sampling the market's environment for the presence of the virus, is clarifying that it indeed had an

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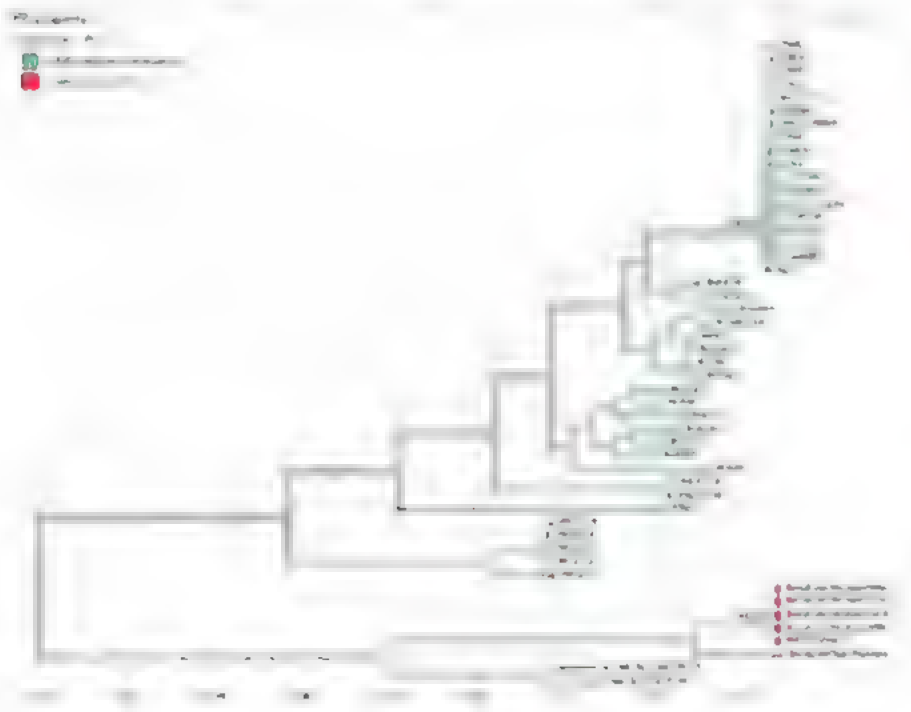

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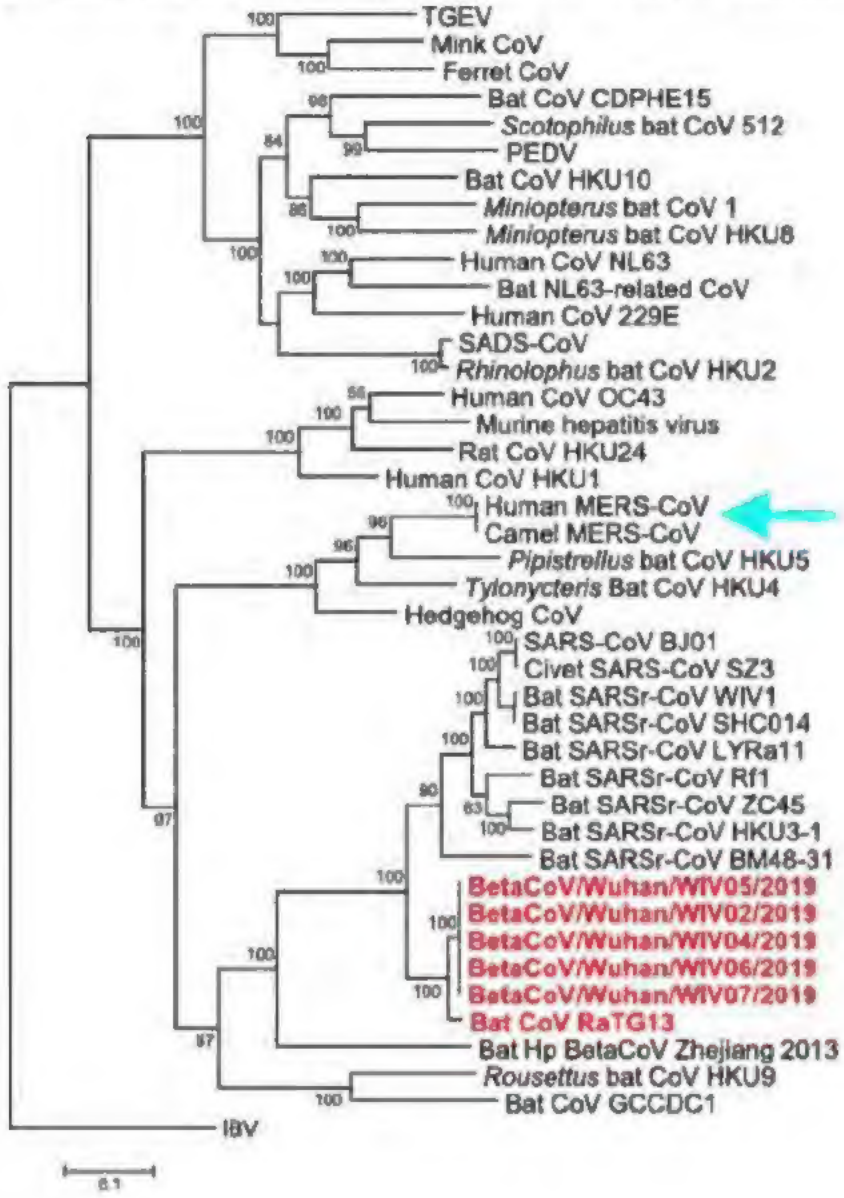

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doi:10.1126/science.abb1256

Jon Cohen

Jon is a staff writer for *Science*.

- Email Jon
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